United Nations Convention on the Law of the Sea SPLOS/313

Meeting of States Parties

Distr.: General
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Twenty-seventh Meeting
New York, 12-16 June 2017
Item 14 of the provisional agenda*

Curricula vitae of candidates nominated by States parties for election to the Commission on the Limits of the Continental Shelf

Note by the Secretary-General

1. The Secretary-General has the honour to submit the curricula vitae of the candidates nominated by States Parties for the election of 21 members of the Commission on the Limits of the Continental Shelf for a five-year term beginning on 16 June 2017 (see annex). The names and nationalities of the candidates are as follows:

Al-Azri, Adnan Rashid Nasser (Oman)
Al-Shehri, Mohammed Saleh (Saudi Arabia)
Awosika, Lawrence Folajimi (Nigeria)
Campos, Aldino (Portugal)
Clarke, Wanda-Lee De Landro (Trinidad and Tobago)
Glumov, Ivan F. (Russian Federation)
Heinesen, Martin Vang (Denmark)
Kalngui, Emmanuel (Cameroon)
Lyu, Wenzheng (China)
Madon, Mazlan bin (Malaysia)
Mahanjane, Estevão Stefane (Mozambique)
Marques, Jair Alberto Ribas (Brazil)
Mazurowski, Marcin (Poland)
Mosher, David Cole (Canada)
Moreira, Domingos de Carvalho Viana (Angola)
Njuguna, Simon (Kenya)
Park, Yong Ahn (Republic of Korea)
Paterlini, Carlos Marcelo (Argentina)
Raharimananirina, Clodette (Madagascar)
Yamazaki, Toshitsugu (Japan)
Yáñez Carrizo, Gonzalo Alejandro (Chile)

2. Information concerning the procedure for the election is contained in document SPLOS/311.

* SPLOS/L.78.

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Annex

Curricula vitae of candidates*

Adnan Rashid Nasser Al-Azri (Oman)

Personal Data

Profession: Oceanographer (Biogeochemistry)

Year of Birth: 1967

Languages: Arabic, English, French (basic)

Occupational Objectives

The nature of my work as an academic and the involvement in national and international organizations have given me a rich experience in combining science, administration, strategic planning and consultancy. I have been involved in preparation of the Omani continental shelf extension (OCSE) submission since 2008 as a technical member in the national committee on the continental shelf extension project. I am currently based in the Ministry of Foreign Affairs as consultant on the project handling multi-disciplinary tasks required to develop the Oman submission. My background in Oceanography, Geological Oceanography, Coastal and Marine Management in general along with the participation in trainings and seminars in implementation of article 76 of UNCLOS has strengthen the ability to undertake the process of delineation of the Oman's continental shelf extension.

Academic Qualifications

- 2003. Ph.D in Biogeochemistry
  University of North Wales, United Kingdom
- 1995. Msc.in Oceanography
  Florida Institute of Technology, USA
- 1991. Bsc. In Marine Sciences & Fisheries
  Sultan Qaboos University, Oman

Chronological Employment Record

2014-Present	Ambassador, Advisor on Continental Shelf Extension Project, Office of the Continental Shelf and Maritimes Affairs, Ministry of Foreign Affairs.
2011-2014	Secondment in the Office of the Continental Shelf and Maritimes Affairs, Consultant Continental Shelf Extension Project, Ministry of Foreign Affairs
2012-2014	Associate Professor in Department of Marine Sciences and Fisheries, Sultan Qaboos University, Head of Oceanography Group and Technical member of Oman continental shelf extension committee Ministry of Foreign Affairs.

* Curricula vitae are issued without formal editing.

2003-2012	Assistant Professor in Department of Marine Sciences and Fisheries, Sultan Qaboos University, Head of Oceanography group and Technical member of Oman continental shelf extension committee Ministry of Foreign Affairs.
1995-2003	Lecturer in Department of Marine Sciences and Fisheries, Sultan Qaboos University.
1991-1995	Demonstrator in Department of Marine Sciences and Fisheries, Sultan Qaboos University.

Professional Experience Related to Continental Shelf Studies

- Involved in the scientific, technical and administrative activities of the Oman Continental Shelf Extension project.
- Assisted in the development of the Oman preliminary submission of the technical summary.
- Worked closely with consultant to develop desktop study and collection of data required for the development of submissions to CLCS in New York.
- Consulting with government officials and stakeholders on issues related to continental shelf such as preparing written and oral advice and recommendations on consultancy and scientific surveys.
- Managing and reporting on project implementation and monitoring project performance.
- I worked closely with GNS Science to co-organize inception workshop on article 76 in Muscat, Oman in March 2014. In charge of administrative and technical aspects of the continental shelf project survey.
- Advising the OCSE committee on surveys and data analyses.
- Develop proposals and implementation plan to mentor technical and legal candidates of the OCSE project.

National and International Conferences and Symposia on UNCLOS

- Participated in the 8th ABLOS Conference: "advances in managing the blue world" Monaco 20-22 October 2015.
- Co-Organized and participated in the workshop organized by UK Hydrographic Office: "Sultanate of Oman Technical Aspects of Maritimes Boundaries, Baselines and Outer Continental Shelf". Muscat 31 May-6 June 2015.
- Co-organized and Participated in the workshop organized by GNS science "UNCLOS article 76" Muscat, Oman, 17-19 March 2014.
- Participated in ABLOS Seminar and Presented a paper "The Sultanate of Oman Continental Shelf Extension Project: An overview" Muscat, Oman 30-31 October 2013.
- Participated in the Sixth ABLOS Conference: "Contentious Issues in UNCLOS" Monaco 25-27 October 2010.
- Participated in the conference on the Law of the Sea "The Current Problematic Issues in the Law of the Sea" Dublin, Ireland 3-4 June 2010.

- Participated in ABLOS Conference "Difficulties in implementing the provisions of UNCLOS" Monaco 16-17 October 2008).

Membership/Professional Societies

- Member of the American Society of Limnology and Oceanography (ASLO)
- Regional representative of the Integrated Marine Biogeochemical and Ecological Research (IMBER)
- Member of Scientific Committee on Oceanic Research SCOR (USA) on harmful algal blooms
- Member of the Steering Committee of the Sustained Biogeochemistry and Ecosystem Research (SIBER)

Mohammed Saleh Al-Shehri (Saudi Arabia)

Personal information

Year of Birth: 1972

Working Languages

Arabic and English

Education

National Defence College — New Delhi, India 2014

Master's Degree in Strategic Defense Studies

- Thesis: Sea-Based Ballistic Missile Defense sine qua for National Defense. A examination of the effectiveness of Ballistic Missile Defense Policies as a way to ensure national defense capabilities. (Published in the National Defence College Library)

Military Staff College — Riyadh, Saudi Arabia 2010

Master's Degree in Military Science

- Thesis: The Study of the Use of Nano-Technology in Military Applications.

King Fahd Naval Academy — Riyadh, Saudi Arabia 1993

Bachelor's Degree in Military Science

Work Experience

Royal Saudi Naval Force (RSNF) 1993-Present

As a career Naval Officer, I have served

- **RSNF Head Quarters Rotation at Staff Command Level** 2009-2011
  - Coordinated and participated in modernization of Saudi armed force program.
  - Coordinated and participated in multi-national naval exercises related to a maritime security.
- **Administrative Field Post in Western Fleet Command (Secretary of the Command)** 2009-2011
  - Participated in counter-piracy mission to prevent pirates from attacking a Turkish cargo ship near the Gulf of Aden (2009).
  - Participated in search and rescue mission on board HMS Riyadh Frigate during the Egyptian Ferry Sinking (MS al-Salam Boccaccio 98) in Red Sea (2006).

- Visiting Foreign Country Ports, including Egypt, France, Greece, Pakistan, Turkey and the neighboring GCC Countries, in a bilateral exercise to exchange experiences, best practices and lessons learned in the maritime security field.

– **Navy Office Afloat** 1993-2009

- Served in various vessel types of Royal Saudi Navy Ships and Fast Patrol Boats ensuring the safeguarding of the territorial waters of the Kingdom of Saudi Arabia, the offshore maritime infrastructure and Securing the interests of the maritime economic of the Kingdom.

- Participated in combined maritime force (CTF 150-CTF151) operations ensuring the security of sea lanes and merchant ships traffic in the region.

Conferences and Trainings

– **Seoul Defense Dialogue — Seoul, Korea**

Member of the Saudi Ministry of Defense Joint Forces Delegation 2016

– **Maritime Infrastructure Protection Symposium (MIPS) hosted by U.S. Naval Forces Central Command — Manama, Bahrain**

Member of the Saudi Ministry of Defense Joint Forces Delegation 2013

– **Jakarta International Defense Dialogue — Jakarta, Indonesia** 2012

Member of the Saudi Ministry of Defense Joint Forces Delegation

– **The Shared Awareness and Deconfliction (SHADE) Conference — Manama, Bahrain** 2011

Member of the Saudi Ministry of Defense Joint Forces Delegation

The Shared Awareness & Deconfliction (SHADE) conference offers a vital opportunity for military and civilian representatives to meet, share information and discuss cooperation opportunities to maintain the current suppression of piracy in the region. The conference's main topic was the causes of piracy, deterrence operations and the protection of merchant shipping.

Seminars and Workshops

Domestic Workshops

– Electronic Warfare Course 2000

– Analytical Use of Computers (Microsoft Suite) Data Entry, Statistics and Data Analysis 1998

– Standards of Training, Certification, and Watch-keeping Course 1996

– Basic Officer Qualification Course 1994

International Workshops

– Combating Maritime Piracy Forum — Dubai, United Arab Emirates 2009

– Electronic Warfare Support Center Managers Course (EWSC) — Toulon, France 2008

– Naval Operations Course for Heads of Departments — Toulon, France 2007

– Joint SAWARI II Program Qualifications Course — Toulon, France 2003

In addition to the above listed workshops, Colonel Al-Shehri has been an integral contributor and participant in the ongoing workshops to define roadmaps for cooperation opportunities with NGOs related to the defense field both domestically and abroad as well as workshops that have contributed to the Djibouti Code of Conduct as it relates to Repression of Piracy and Armed Robbery against ships in the Western Indian Ocean and the Gulf of Aden.

Military Honors, Decoration and Medals

– Saif Abdullah Exercise Medal	2014
– Perfection Medal	2014
– 20 Years Military Service Medal	2013
– Security Medal	2013
– Search And Rescue Medal	2006
– Medal of Tercentenary of Saudi Arabia Foundation)	1998
– Desert Storm Combat Bravery Medal	1991
– Kuwait Liberation Medal	1991

Lawrence Folajimi Awosika (Nigeria)

Personal information

Year of Birth: 1949

Place of birth: Ondo, Ondo State, Nigeria

Education

(i) Aquinas College Akure Ondo State Nigeria 1964-1968
West African School Certificate Grade 1.

(ii) Howard University Washington DC. USA 1974-1977
B.Sc. Geology G.P.A., 3.36 Cum Laude

(iii) George Washington University Washington DC, USA 1978-1980
M.Sc. Geology 1980
Emphasis: Geophysics, Sedimentology, Stratigraphy, Field Geology, and Geochemistry.
Research: Seismic and Gravity Survey of Triassic Sediments in Arcola Quadrangle, Virginia. U.S.A.
Thesis: "Magnetic Survey of Basalt Flows in Remington Quadrangle, Virginia. U.S.A."

(iv) University of Obafemi Awolowo Ile Ife.
PhD. Applied Geophysics 2005
Thesis: Geophysical Survey of Avon Canyon in the Western Nigeria Continental Shelf.
Emphasis: Seismic interpretation and continental shelf transport/circulation Dynamics and coastal area implications.

Experience

Has over 35 years of national and International experience in Marine geological/geophysical and ocean/coastal surveys and studies, EIA, project management, and marine environmental issues. At the Nigerian Institute for Oceanography and Marine Research (NIOMR) Lagos, he was in charge of the geological/geophysical survey of the Nigerian Continental shelf as well as Coastal erosion and ocean dynamics capital projects.

Employment chronology

(i) Washington Metropolitan Area Transit Authority (METRO) Washington D.C., U.S.A. Dec. 1972 to Dec. 1977.
Involvement: Maintenance Shop Mechanic, Later Assistant Foreman Mechanic workshop, Bladensburg road, Washington D.C., U.S.A.

(ii) Howard University Washington D.C., U.S.A. Jan. 1976 to April 1977
Involvement: Graduate Assistant (Sedimentation and Physical Geology).

(iii) University of Maryland
College Park, Maryland. U.S.A. Dec. 1977 to April 1978
Involvement: Laboratory Instructor — Physical Geology.

(iv) Howard University
Washington D.C, U.S.A. Aug. 1980 to Dec. 1981
Involvement: Lecturer — Geophysics and Environmental Geology.

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(v) Nigerian Institute for Oceanography and Marine Research (NIOMR)
P.M.B.12729
Victoria Island Lagos. 21 March 1983 to 27 July 2014.
Retired on 27 July 2014 as: Director Marine Geology/Geophysics

(vi) Technical Adviser/Member [2002 to present]
High Powered Presidential Committee on the Nigerian Extended Continental Shelf project
Permanent Mission of Nigeria to the United Nations
828 2nd Ave, New York, NY 10017

Professional awards

Commander — Federal Republic of Equatorial Guinea.

Merit award by the President of Equatorial Guinea for outstanding services during the Nigeria/Equatorial Guinea Maritime Boundary Negotiations 2002

(i) Professional Merit Award of Excellence 2004: Fisheries Society of Nigeria

(ii) Intergovernmental Panel on Climate Change (IPCC) Award presented for contributing to the award of the NOBEL PEACE PRIZE for 2007 to the IPCC

(iii) Intergovernmental Oceanographic Commission (IOC) of UNESCO Medal of Excellence in Oceanography. Awarded at the UNESCO Headquarters Paris on 22nd June 2011.

Commission on the Limits of Continental Shelf (CLCS)

(i) Member of the CLCS — 1997 to 2002 (Vice Chairman); 2002 to 2007; 2007 to 2012 (Vice Chairman 2009-2012) and 2012 to 2017.

(ii) Chairman of the CLCS 2007 to 2012.

(iii) Member: CLCS subcommission for the consideration of submission of extended continental shelf claim made the Brazil; Russian Federation; Australia; joint submission made by France, Ireland, Spain and the UK; Norway; United kingdom in the Ascension Area (Chairperson); Japan; the Philippines in the Benham Rise region; the Cooks Islands concerning the Manihiki Plateau; Revised submission of Russian Federal in the Sea of Okhotsk; Argentina; Mauritius in the region of Rodrigues Island; Kenya; Revised submission by Brazil in the southern region and Partial revised submission of the Russian Federation in the Artic.

(iv) Lecturer — DOALOS Training on Article 76 Accra Ghana
5-9 December 2005 and Cape Town South Africa 13 to 17 August 2007.

Brief on other international assignments undertaken for UN and other international agencies

(i) Member of the UNEP group of experts on the development of a GEF project for a Global International Waters Assessment GIWA) 1997.

(ii) Member IOC Editorial Board for the International Bathymetric Map of the Central Eastern Atlantic (IBCEA) 1989-2009.

(iii) Member of Scientific Steering Committee for Land Ocean Interaction in the Coastal Zone (LOICZ) International Geosphere Biosphere Programme (IGBP) 1996-2002.

(iv) Member of Inter-Governmental Panel on Climate Change (IPCC) working group on the second assessment.

(v) Member of advisory board on Marine Natural Resources Management of Advisory Committee on Protection of the Sea (ACOPS) 1997-2005.

(vi) Member IOC-UNESCO group of expert on GOOS (Global Ocean Observing System) Coastal Module.

(vii) UNDP International Consultant (Coastal Engineering/Planning/Management) Liberia LDCF/GEF/UNDP Coastal Project on mitigating coastal erosion and sea level rise. 2009-2010.

(viii) Head — Intergovernmental Oceanographic Commission of the Central Eastern Atlantic (IOCEA) Project Office Lagos. 2001 to 2010.

(ix) Member of the Pool of Experts of the Regular Process for global reporting and assessment of the state of the marine environment, including socio-economic aspects. March 2013 to present.

Some international oceanographic research cruises

(i) Multi-disciplinary research cruise (GEOCARBAL 85) onboard R/V CORNIDE SAVEDRA in the Balearic continental shelf western Mediterranean (May 12 to June 10, 1985).

(ii) Gravity survey of the Gulf of Guinea shelf on board R/V STARELLA 24 September to 6 October 1987. A United States of America project funded by the U.S. Government.

(iii) Cruise Leader: First IOC of UNESCO cruise in the Gulf of Guinea, on board NIOMR R/V SARKIM BAKA 10-25 Oct. 1989 to collect hydrodynamic and marine geological data.

(iv) IOC/NOAA/ROPME 100 day cruise in the Persian Gulf to assess the impacts of the Gulf war on the marine environment of the Gulf onboard NOAA's R/V MT. MITCHELL Leg six, 20 to 30 May 1992.

(v) Cruise leader on a total of 8 sea cruises since 1984 in the Nigerian continental shelf on board NIOMR's R/V OKION and SARKIM BAKA.

(vi) Co-cruise leader — Sino Nigeria Joint Research Cruise in the Western Nigerian Continental Shelf on board R/V DAYANG YIHAO 21-29 September 2012.

(vii) Client representative — Nigerian Extended Continental Shelf project first survey in the Gulf of Guinea 19 May-20 June 2006 and second survey in the Gulf of Guinea. 28 March to 30 April 2016.

Publications and some books edited/authored or co-authored

Has published over 67 national and International papers on marine and ocean issues. Has also edited nine publications in the areas of marine geology/geophysics and ocean/coastal dynamics. Notable ones include:

(i) Principal co-author: Global Climate Change and the Rising Challenge of the Sea. IPCC Response Strategies Working Group May 1992.

(ii) Editor — Coastlines of Western Africa (Ed. Larry Awosika, Chidi Ibe and P. Scroeder). Published by the American Association of Civil Engineers New York, New York. 1993. 399p.

(iii) Co-author — Implications of Climatic Changes and Sea Level Rise on the Niger Delta, Nigeria. A report for UNEP.

(iv) Nearshore Dynamics and Sedimentology of the Gulf of Guinea (1998). Ed. A. Chidi Ibe, Larry Awosika and Kouame Aka. 211p. Proceedings of the First Symposium on the IOCEA cruise in the Gulf of Guinea.

(v) Tortel and Awosika L. F (1996) Oceanographic Survey Techniques and Living Resources Assessment Methods. IOC Manual and Guides No. 32. 34p.

(vi) A Sea of Troubles (2001). IMO/FAO/UNESCO/WMO/WHO/IAEA/UN/UNEP (GESAMP). GESAMP Reports and Studies No 70. Printed by RID-Arendal for UNEP. 35p.

(vii) Protecting the Oceans from Land based activities (2001). IMO/FAO/UNESCO/WMO/WHO/IAEA/UN/UNEP. GESAMP Reports and Studies No 71. Printed by RID-Arendal for the UNEP. 162p.

Aldino Campos (Portugal)

Personal information

Year of Birth: 1967

Languages: Portuguese (native speaker)
English (fluent, spoken and written)
French: (basic user)
Spanish: (basic user)

Academic qualifications

Bachelor in Naval Socio-Military Sciences, 1992, Escola Naval, Lisbon (Portugal);

Specialization in Hydrography (FIG/IHO category A), 1996, School of hydrography and oceanography of the Portuguese Hydrographic Institute, Lisbon, Portugal;

Master of Engineer in Geodesy and Geomatics Engineering, 2001, University of New Brunswick, Fredericton, Canada;

Master of Sciences in Geographic Information Systems, 2002, Instituto Superior Técnico, Lisbon (Portugal);

Diploma on Hydrographic Engineer (with final report on Hydrographic Data Warehousing), 2002, Instituto Hidrográfico, Lisbon (Portugal);

PhD in Territory Engineering (major and thesis in the Extension of the Continental Shelf Project), 2009, Instituto Superior Técnico, Lisbon (Portugal),

PhD Candidate in International Relations (major in Globalization and Environment and thesis on Ocean's Governance), ongoing, Faculty of Social Sciences — Nova University of Lisbon, Portugal.

Professional experience

2016→ Visiting Professor, Marine related projects (Design and Development)

Faculty of Engineering — University of Porto, Porto, Portugal

2016→ Researcher at the Naval Investigation Centre (CINAV — Escola Naval)

2012→2016 Head of the Portuguese Task Group for the Extension of the Continental Shelf

Quality control revision and editing of the Addendum to the Submission of Portugal to the Commission on the Limits of the Continental Shelf;

Directed the technical cooperation actions related to the Extension of the Continental Shelf Projects;

Supervised the preparation of SNIM@r — National Maritime Information System.

2009→2016 Lecturer of Geographic Information Systems, Portuguese Naval Academy, Lisbon, Portugal;

Lecturer of Geo-Spatial Information Management, Portuguese Naval Academy, Lisbon, Portugal.

2009→2010 Lecturer of Geographic Information Systems, Faculty of Sciences of the University of Lisbon, Portugal.

2007→2012 Geomatics Coordinator of the Task Group for the Extension of the Continental Shelf;

Adviser for the GIS and Hydrography fields in the process of follow up of the Portuguese Submission to the Extension of the Continental Shelf;

Technical expert responsible for the Geomatics component of the Portuguese Submission to the Commission on the Limits of the Continental Shelf

2007→2009 Adviser of the Division of Hydrography for Spatial Data Management (Bathymetric Data);

Development and maintenance of the Hydrographic Data Warehouse, Portuguese Hydrographic Office;

2004→2007 Deputy-head of the Division of hydrography;

Permanent consultant of the Portuguese Hydrographic Institute at the Task Group for the Extension of the Continental Shelf (Geomorphometric Analysis Information Systems);

Management of the bathymetric information system (HDW);

Software design and implementation for the ray tracing analysis of the EM120 and EM710 Multibeam Systems; Software design and implementation for the evaluation of the effort of the Multibeam surveys in deep waters;

Software development of Spatial Data Mining tools to assess the quality of the bathymetric coverage on the Hydrographic Data Warehouse;

Design and implementation of a remote control system for bridge control to the EM120 Multibeam system (Win32-UNIX);

Design, implementation and maintenance of the WAP site of the Portuguese Hydrographic Office;

Lecturer at the School of Hydrography and Oceanography of the Portuguese Hydrographic Office (GIS, Spatial Data Bases, Hydrographic, Nautical charting and Computer Sciences);

Lecturer of the Hydrography course at the Portuguese Naval Academy (Hydrographic Surveying).

2003→2004 Lecturer of Hydrography at Faculty of Sciences of the University of Lisbon, Portugal;

2001→2004 Deputy-head of the Technical and scientific Data Centre;

Database Administrator of the Oracle Database production system;

Member of the Working Group for the Desktop Study for the Extension of the Portuguese Continental Shelf. Design and development of the bathymetric and geophysics' database to support the initial desktop studies;

1996→1999 Deputy-head of the Hydrographic Brigade;

Participation in several hydrographic surveys (harbor, coastal and oceanic) in Continental Portugal, the Azores and Madeira Archipelagos. This included the planning, field execution (both as surveyor and survey director) and data processing;

Coordinator of the Practical course on Hydrography (CPH99);

Coordinator of the bathymetric acquisition and data processing course at the Hydrographic Brigade.

1991→1995 Served in the Portuguese Navy aboard of several ships of the surface fleet and hydrographic ships.

Special assignments and activities

Member of the Engineering Society — Geographic Surveying College — 69419;

Member of the scientific board of the International Summer School on Marine Spatial Planning GISlands 2010. Universidade dos Açores, Ponta Delgada, August 2010;

Member of the scientific board of the Hydrographic Engineering Conference. Instituto Hidrográfico, Lisbon, June 2010.

Military career

Ranks: Midshipman, 1991; Ensign, 1992; 2nd Lieutenant, 1993; 1st Lieutenant, 1997; Lieutenant-Commander, 2004; Commander, 2010.

Decorations: Medal of Distinguished Services (Silver)

Medal of Exemplar Behavior (Silver)

Activities related to UNCLOS

Adviser for the GIS and Hydrography fields in the follow up process of the Portuguese Submission to the Extension of the Continental Shelf;

Technical Expert responsible for the Geomatics aspects of the Portuguese Submission to the CLCS (GIS, Geodesy and Hydrography);

Design and implementation of a data mining methodology to optimize the delineation of the outer limit of the continental shelf based on multibeam data;

Design and implementation of an alternative algorithm to determine the median line from two distinct coastal States in ArcGIS (ESRI) environment.

Publications in English

Campos, A. (2009). Modelling the Continental Shelf Extension near the Foot of the Slope Fuzzy-band. Dissertação para obtenção do grau de Doutoramento, Departamento de Engenharia Civil e Arquitectura, Instituto Superior Técnico, Lisboa, Portugal;

Campos, A. (2001). Hydrographic Data Warehouse — An added value to hydrographic Data. M.Eng. report, Department of Geodesy and Geomatics Engineering Technical Report, University of New Brunswick, Fredericton, Canada;

Jay, S., Fátima, F. L., O'Mahony, C., Gomez, M., Rooney, a., Almodovar, M., Gee, K., Vivero, J. L. S., Gonçalves, J. M.S., Fernandes, M. L., Tello, O., Twomey, S., Prado, I., Fonseca, C., Bentes, L., Campos, A., et al. (2016). Transboundary dimensions of marine spatial planning: Fostering inter-jurisdictional relations and governance, Marine Policy, Elsevier, March 2016.

F. Tempera, E. Giacomello, N. Mitchell, A.S. Campos, A. Braga Henriques, A. Martins, I. Bashmachnikov, T. Morato, A. Colaço, F.M. Porteiro, D. Catarino, J. Gonçalves, M.R Pinho, E.J. Isidro, R.S. Santos and G. Menezes (2011). Mapping the Condor seamount observatory (Azores, NE Atlantic). Geomorphology as Benthic Habitat: GeoHab Atlas of seafloor geomorphic features and benthic habitats — Elsevier Insights;

Monahan, D., Hecht, H., Wells, D., Kenny, M., Campos, A. (2001). Challenges and Opportunities for Hydrography in the new Century. International Hydrographic Review, Vol.2, No.3 (New Series), December 2001;

Navarro, A., Campos, A., Brandão, F., Lobo, A., Abreu, M.P. (2010). Updating the National Coastline of Portugal to Support the Portuguese Submission under Article 76 of UNCLOS. 6th Biennial ABLOS Conference, Monaco, October 2010;

Campos, A., Pimentel, F. M., Abreu, M.P. (2007). Geomorphometric Data Management for the Portuguese Continental Shelf Extension Project. CoastGIS07 Conference, Santander, Espanha;

Ng'ang'a, S., Campos, A., Sutherland, M., Nichols, S. (2001). Supporting Coastal and Marine Monitoring by Remotely Accessing Data Using Spatial Fusion and WAP. CoastGIS Conference, Halifax, Canada;

Fernando Tempera, Andreia Braga Henriques, José Nuno Pereira, Aldino Santos Campos, Joaquim Luís, Ana Colaço, Telmo Morato, Gui Menezes, Filipe Mora Porteiro & Ricardo Serrão Santos (2010). "Terrain characterization of the Condor seamount in preparation of deep-sea habitat predictive modeling." HERMIONE Annual Meeting April 2010, Malta; F. C. Dias;

N. Lourenço; A. Lobo; A. Santos de Campos; M. Pinto de Abreu (2009). "FRIED EGG": An Oceanic Impact Crater in the Mid-Atlantic?. AGU Fall Meeting 2009, San Francisco, CA, USA;

Campos, A., Abreu, P.; Pimentel, F. (2008). FoS Miner — An added Value tool for UNCLOS Article 76 implementation. Canadian Hydrographic Conference 2008, Victoria, Canada;

Campos, A.; Chim, V.; Navarro, A.; Artilheiro, F. (2008). Adjusting the Nautical Cartography from ED50 to ETRS89 in a Database Production Environment. Canadian Hydrographic Conference 2008, Victoria, Canada;

Campos, A., Wells, D. (2002). Spatial Data Warehousing — A Bathymetric Data Storage System. Canadian Hydrographic Conference 2002, Toronto, Canada;

Sutherland, M., Ng'ang'a, Nichols, S., Campos, A., (2001). The Use of Spatial Fusion and WAP to Provide Support Information for Marine Environment Sustainability. Digital Earth Conference, Fredericton, Canada.

In Portuguese

Brandão, F.G., Campos, A., Navarro, A., Lobo, A., Equipa EMEPC (2010). GeoDist — Ferramenta de cálculo geodésico no ArcGIS. Primeiras Jornadas de Engenharia Hidrográfica, Instituto Hidrográfico, Lisboa, Junho 2010;

Lobo, A., Navarro, A., Campos, A., Brandão, F.G., Equipa EMEPC (2010). Implementação do Geocoder/ARA em diferentes aplicações comerciais para a classificação remota do fundo do mar a partir de dados de retrodifusão acústica. Primeiras Jornadas de Engenharia Hidrográfica, Instituto Hidrográfico, Lisboa, Junho 2010;

Campos, A., Artilheiro, F., Pimentel, F. (2005). Planeamento assistido aplicado aos levantamentos com sondadores multifeixe em grandes fundos. IV Conferência Nacional de Cartografia e Geodesia 2005, Lisboa, Março 2005;

Campos, A., Baptista, R., Chumbinho, R. (2002). Acesso Remoto a Informação Hidrográfica via WAP. III Conferência Nacional de Cartografia e Geodesia 2002, Aveiro, Dezembro 2002;

Campos, A., Chumbinho, R. (2002). Gestão da Informação Batimétrica — Implementação de um Spatial Data Warehouse para a Gestão de Dados Batimétricos. III Conferência Nacional de Cartografia e Geodesia 2002, Aveiro, Dezembro 2002;

Brandão, F.; Campos, A.; Equipa EMEPC (2008). GeoDist — Ferramenta de Cálculos Geodésicos no ArcGIS. EUE'08, "Novos Mundos, Um Mapa". Centro de Congressos de Lisboa. 26 e 27 de Março de 2008;

Wanda-Lee De Landro Clarke (Trinidad)

Education

2015	LLB. (Honours)	London, United Kingdom
	University of London,	
2012	Diploma in Law	London, United Kingdom
	University of London	
2000	Unix System Administration	
	Seneca College	Toronto, Canada
1996	Ph.D. Geophysics,	
	York University,	Toronto, Canada
1981	MSc., Earth Science,	
	University of Manitoba,	Winnipeg, Canada.
1978	BSc., Math and Physics (Honours)	
	University of the West Indies	Trinidad, W. I.

Key competencies

- Leadership skills
- Results oriented project management skills
- Legal Training in Company, Contract and International Law
- Experience in using seismic interpretation with Petrel, Geoframe, Landmark, SMT and GIS
- Experience in 2D and 3D seismic interpretation on international and domestic assets, including heavily structured plays
- Experience in seismic attribute mapping and AVO analysis
- Experience in both clastics and carbonate plays
- Strong geological knowledge of depositional systems and their seismic expression
- Strong computer and applications software including Unix
- Extensive experience as instructor, communicator and mentor

Experience

2015-Present	Director, National Quarries Company Limited, responsible for performance monitoring, strategic planning and budget for this state enterprise.
2010-Present	Senior Geophysicist-Exploration Team Lead (Acting) in the Resource Management Division of the Ministry of Energy and Energy Affairs, responsible for designing and monitoring projects assigned to a team of junior Geoscience professionals.

2006-2011	Instructor with the Petroleum Geoscience Department, University of the West Indies, providing instruction in courses leading to Bachelor's degree in Petroleum Geosciences, including Seismic Acquisition, Processing and Interpretation as well as, Computational Petroleum Geology and Geophysics.
2005-2010	Geophysical Specialist in the Resource Management Division of the Ministry of Energy and Energy Affairs, responsible for providing technical expertise as part of a multi-disciplinary team, communicating the results of technical analyses to team members and senior managerial and ministerial committees, conducting reserves evaluations and resource assessments as part of block evaluation for competitive bidding activities, representing the interests of the Government in discussions on maritime boundary issues, reserve audits, lease tender evaluation and other special projects.
2002-2003	Instructor (Part-time) in Seneca College responsible for providing instruction in courses leading to Diploma in Unix System Administration, including Introduction to Unix, Shell Script Programming and Unix System Administration.
2001-2003	Release Engineer in Legato Systems Canada, responsible for maintenance of code database on Windows, Unix and Linux platforms (including Solaris, HP, Linux, AIX, Windows NT and Windows 2000).
1999-2001	Instructor (Part-time) with York University, responsible for providing instruction in first and second year Earth Science courses, including Introduction to Geophysics and Introduction to Earth and Atmospheric Science.
1997-1999	Software Instructor in Schlumberger responsible for teaching beginner, intermediate and advanced courses in Geoframe both in the USA and overseas to Geoscience professionals.
1996-1997	Senior Geophysicist with Amoco, conducting post appraisal of exploration drilling in the Columbus Basin offshore east coast Trinidad.
1989-1991	Geophysicist in Ministry of Mines and Northern Development, Ontario responsible for development of pc-based software to automate analysis of seismic data.
1986-1989	Seismic Researcher in Seismic Research Unit of the University of the West Indies, developing of pc-based software to automate analysis of seismological data and monitoring earthquake activity in the Caribbean region.
1981-1986	Exploration Geophysicist in Dome Petroleum responsible for designing and supervising the acquisition of seismic data in Southern Alberta planning and supervise processing of seismic data, evaluating Southern Alberta region resulting in two successful gas wells and evaluating prospects in Artic and East Coast Canada.

Publications

2014	Multiclient 3D Seismic Surveys in Trinidad and Tobago — Towards a Policy — W. De Landro Clarke and P. Bradshaw-Niles.

2012 Evidence of Gas Hydrates in Block 26, Offshore Trinidad Jill Marcelle-De Silva, Adrian Thomas, Wanda Lee De Landro Clarke and Michelle Allum; Energies 2012, 5 (5).

2010 Geophysical aspects of shale mobilization in the deep water off the East Coast of Trinidad. AAPG Memoir 93, 2010.

1997 Numerical models of mantle convection with secular cooling. GJI.

1995 The period of free core nutation, towards a dynamical basis for 'extra flattening' of the core mantle boundary. Physics of the Earth and Planetary Interior, 90, p255, 1995.

1993 Mantle convection and extra flattening of the core mantle boundary, EOS transactions, AGU 74 Supplement, p80, 1993.

1982 Seismic Structure of the Superior-Churchill Pre-Cambrian boundary Zone, JGR, 87, p6884, 1982.

Ivan F. Glumov (Russian Federation)

Personal information

Year of Birth	1936
Place of birth	Kaluga, USSR/Russia
Languages	Russian (mother tongue), English (fluent)

Current positions

2004-present	Adviser to the Minister of Natural Resources and Environment of the Russian Federation
2005-present	Member of the Board "Severneftegaz" OJSC (Russia's hydrocarbon offshore exploration company)
2009-present	Scientific consultant of the Russian Federation Project on the Limits of the Continental Shelf with respect to the Arctic Ocean
2012-present	Vice-Chairman, Commission on the Limits of the Continental Shelf
2015-present	Member of the Board "Sovkomflot" OJSC (Russia's shipping company in maritime transportation)

Academic qualification

1972 — PhD in Maritime Geodesy and Hydrography, Moscow State University of Geodesy and Cartography

1988 — Doctor of Technical Science (geophysics), Lomonosov Moscow State University, Faculty of Geology

Professional experience

2002-October 2004	Minister of Natural Resources and Environment of the Russian Deputy Federation, responsible for priority functions of the Ministry in connection with the mineral resources of the world oceans
1999-2001	State-Secretary/Deputy Minister of Natural Resources of the Russian Federation
1992-1999	Head of Department for Scientific and Maritime issues, Ministry of Natural Resources of the Russian Federation
1988-1991	Head of the Maritime Geological Service, Ministry of Geology of the USSR
1982-1988	Director-General of the Southern Scientific Production Association for Maritime Geological Prospecting (Yuzhmorgeologiya), Director of Research In Maritime Geophysics Institute, Ministry of Geology of the USSR
1959-1970	Senior hydrographer, chief geophysist, Chief of Cruise on maritime expeditions of the Ministry of Geology of the USSR

Marine Survey experience

I. Glumov has over 80 months of seagoing experience on geophysical and geological cruises. He was chief hydrographer, chief geophysist and Chief of Cruise for more than 25 cruises related to:

Geophysical exploration for oil and gas in Caspian Sea, Black Sea, Arctic Seas, continental shelf of Egypt, India, Bulgaria, Angola

Scientific geophysical and geological survey in Pacific Ocean for the study of the manganese nodules and cobalt crusts and in Atlantic Ocean for the study of the polymetallic sulphides

Scientific hydrographical, geophysical and geological survey on Arctic Ocean to collect data for development of the CLCS submissions

Main professional activities related to the United Nations Convention on the Law of the Sea

1980-1984 Member of the Soviet delegation in negotiations with France, Japan and the United States of America on the resolution of Seabed Area disputes in Pacific Ocean

1984-1995 Member of Soviet, and subsequently Russian, delegations to sessions of the Preparatory Commission for the United Nations International Seabed Authority

1995-2004 Member, Deputy Head, Head of the Russian delegations to sessions of the International Seabed Authority

1996-2006 Member of the Legal and Technical Commission of the International Seabed Authority

2000-2003 Head of the Russian delegations in negotiations with Kazakhstan and Azerbaijan on the delimitation of seabed in Caspian Sea

2001-2003 Head of the Russian delegation to the Commission on the Limits of the Continental Shelf

12-present Vice-Chairman of the Commission on the Limits of the Continental Shelf

Research interest

Legal, scientific and technical issues related to delimitation of the continental shelf

Legal, scientific and technical issues related to the activity in the Area for the research, exploration and exploitation of the mineral resources according to Part XI of the UN Convention of the Law of the Sea

Scientific and technical issues related to geophysical research on the continental shelf for oil and gas

Processing and interpretation of 2D-3D marine geophysical research for oil and gas

Modern deep sea and marine geophysical technologies

Publications

Author of more than 125 scientific publications, including five monographs:

(1) Wide-angle deep seismic profiling of the sea floor. In two parts. M.: Nauka, 2001, 554 p. (published in Russia)

(2) Regional Geology and Oil and Gas Content of Caspian Sea, M.: NEDRA, 2004, 324 p. (published in Russia)

(3) Regional Geology and Oil and Gas Content of Caspian Sea, 2007, 242 p. (published in China)

(4) Inhabited submersibles. St. Petersburg, Gidrometeoizdat, 2002, 273 p. (published in Russia)

(5) Regional Geology and the Prospects of the Oil and Gas content of the Black Sea's deep-water valley and Contiguous Offshore Area. In two parts. 2014, 334 p. (published in Russia)

Other scientific activities

Member of the Council of experts of the Government of the Russian Federation. Expert assessment of projects on the development of oil and gas on the continental shelf of the Russian Federation, including the Sakhalin 1,2,3, Prirazlomnoe and Shtokman, and "Blue Stream" projects.

Member of the Marine Board of the Government of the Russian Federation. Head of Section on the development of maritime mineral and energy resources.

Drafting of international legal documents related to the implementation of the United Nations Convention on the Law of the Sea, and the Federal Acts on the regime of continental shelf of the Russian Federation, on the Exclusive Economic Zone of the Russian Federation, on internal waters, territorial sea and contiguous zone of the Russian Federation, and on mineral resources, thereof

Honorary titles

Honored Geologist of Russia

Honored Scientist of Russia

Holder of State awards of the USSR, the Council of Ministers of the USSR and the Government of the Russian Federation in the fields of science and technology

Martin Vang Heinesen (Denmark)

Personal Data

Name:	Martin Vang Heinesen
Year of Birth:	1953
Place of Birth:	Toftir, Faroe Islands

Education

1987	Cand.Scient. Degree (Masters/PhD equivalent) in Geology, Copenhagen University
1977-1979	Physical Geography studies at Copenhagen University
1976-1977	Mathematics and Physics studies at Copenhagen University

Employment record

2003-	Head of Geological Department, Faroese Earth and Energy Directorat
2003-2011	Project Manager of the Continental Shelf Project of the Kingdom of Denmark, with respect to the Faroe Islands
2000-2003	Director of the Faroese Geological Survey
1993-1997	Director of the Faroese Petroleum Administration
1987-2000	Head of Geological Department at the Museum of Natural History, Faroe Islands

Commission on the Limits of the Continental Shelf (CLCS)

2015-	Vice-Chair of the Subcommission considering the Submission made by Nigeria
2015-	Member of the Subcommission considering the Submission made by Kenya
2015-	Member of the Subcommission considering the Submission made by Brazil
2013-	Vice-Chair of the Subcommission considering the Submission made by Pakistan
2012-	Member of the Training Committee
2012-	Member of the Editorial Committee
2012-	Member of the Committee on Confidentiality
2012-	Member of the Subcommission considering the Submission made by Argentina
2012-	Member of the Subcommission considering the Submission made by the Cook Islands
2012-	Elected Member of the CLCS

Miscellaneous Qualifications and Special Tasks

2014-	Co-organizer and tutor at the international specialist seminar, the Summer Academy on the Continental Shelf, focussing on the intricate legal and technical conditions governing the entitlement to and establishment of the continental shelf beyond 200 M, and on the delimitation of overlapping entitlements to such areas.
2014	Assisted the Kingdom of Denmark in the preparation of the Partial Submission in respect of the Northern Continental Shelf of Greenland
2013	Assisted the Kingdom of Denmark in the preparation of the Partial Submission in respect of the North-Eastern Continental Shelf of Greenland
2008-2011	Co-Chairman of the Task Force that prepared the partial submissions of the Kingdom of Denmark to the Commission on the Limits of the Continental Shelf in respect of the northern and southern Continental Shelf, respectively, of the Faroe Islands
2006-2008	Member of the IGC-33 Science Committee, Oslo, Norway
2003-	Member of the Steering Committee of the Continental Shelf Project of the Kingdom of Denmark, in respect of the Faroe Islands
2000-2003	Member of the Board, *Sindri* — Joint Geoscience Work Programmes for Hydrocarbon Exploration Licensees within the Jurisdiction of the Faroes
1995-2000	Member of the Board, Geological Survey of Denmark and Greenland (GEUS)
1992-2000	Head and Coordinator of the Governmental Technical Work during planning and establishment of the Faroese Hydrocarbon Exploration Regime, including the establishment of the Faroese Petroleum Administration and the Faroese Geological Survey, in addition to the planning and execution of the first Faroese exploration licensing round
1992-1997	Member of the Faroese Hydrocarbon Planning Commission
1991-	Member of the Delegation of the Kingdom of Denmark in charge of continental shelf delimitation negotiations between the Faroe Islands and neighbouring coastal States, within and beyond 200 M
1987-	External lecturer in Geology, University of the Faroe Islands

Recent Publications and Presentations

Heinesen, M.V. Application of the Sediment Thickness (Gardiner) Formula of A76. International Conference: "Geological Structure and Evolution Problems of the Arctic Basin in the Context of Submission on the Outer Limits of the Continental Shelf of the Russian Federation in the Arctic Ocean". VSEGEI, 74 Sredny Pr., St. Petersburg, May 2014

Intervenor at the session on Recent Developments of the Outer Limit of the Continental Shelf, at the Global Ocean Regime Conference: Beyond Scientific and Legal Limits on the Continental Shelf. Soul, Korea, June 2013

Heinesen, M.V. (presenter), and Mørk, F. The Determination of the Foot of the Continental Slope at its Base: Lessons Learned. International Workshop: Sharing

Experiences on the Delineation of the Outer Limit of the Continental Shelf. Buenos Aires, 12-14 October 2011

Heinesen, M.V. (presenter), and Mørk, F. The Continental Shelf Project of the Kingdom of Denmark: The Continental Shelf of the Faroe Islands. GAC-MAC Annual Meeting, Ottawa, 25-27 May 2011

Heinesen, M. V. and Kunoy, B. (presenters) et al. Presentation of Partial Submission of the Government of the Kingdom of Denmark together with the Government of the Faroes to the Commission on the Limits of the Continental Shelf in respect of the Southern Continental Shelf of the Faroe Islands. United Nations Headquarters, New York, 31 March 2011

Kunoy, B., Heinesen, M. V. and Mørk, F. (2010). Appraisal of Applicable Depth Constraint for the Purpose of Establishing the Outer Limits of the Continental Shelf. Ocean Development & International Law, 41: 4, 357-379

Heinesen, M. V. et al. Presentation of Partial Submission of the Government of the Kingdom of Denmark together with the Government of the Faroes to the Commission on the Limits of the Continental Shelf in respect of the Continental Shelf North of the Faroe Islands. United Nations Headquarters, New York, 27 August 2009

Heinesen, M.V. et al. Continental Shelf Project of the Kingdom of Denmark-Area north of the Faroe Islands. International Geological Congress, IGC33, Oslo, 6-14 August, 2008

Emmanuel Kalngui (Cameroon)

Year and place of birth:	1956, Douala
Place of origin:	Province of Littoral, Department of Sanaga-Maritime, Arrondissement of Ngambé, District of Massock Song-Loulou, Canton of Logkat, Village of Saha
Highest degree earned:	Engineering degree in Petroleum Geology
Specialty in the engineering and field:	Geology of oil and gas prospecting exploitation
Civil service grade:	General engineer in the corps of mining and geological engineers; civil service category A2, grade IMG, index No. 1115
Date of entry on duty in the civil service:	10 November 1982

Positions held

31 December 1987-16 October 1998: Deputy Chief, Mining Technology and Conservation Service

Since 16 October 1998: Chief, Hydrocarbons Exploitation Control Service

Certified Mine Inspector, appointed by decision No. 706/MINMEE/DMTNI/SAT of 22 October 1990

Inspector of classified establishments such as service stations, factory boilers, etc.

Academic Background

Degree	*Specialty*	*Date received*	*Name of establishment*
Certificat d'Études primaires élémentaires (primary school certificate)	Primary school	1967	Primary school of the Catholic Mission of Dibamba, Douala 3
Brevet d'Études du premier cycle (lower secondary school certificate)	Lower secondary school studies, 1963-1972	1972	Collège Libermann, Douala
Probatoire, series C (prerequisite for the baccalaureate)	Upper secondary school studies, 1973-1974	1974	Collège Libermann, Douala
Baccalauréat (baccalaureate), series C	Upper secondary school studies, 1974-1975	1975	Collège Libermann, Douala
	Mathematics-Physics Section	1976	University of Yaoundé, Faculty of Sciences
	Russian language	1977	Preparatory Institute of the Russian Language, Baku, USSR

Degree	*Specialty*	*Date received*	*Name of establishment*
Engineering degree in Petroleum Geology	Geology of oil prospecting and exploitation	1982	I.M. Gubkin Institute of the Petrochemical and Gas Industry (*Grande École*, or higher school), Moscow, USSR
Russian language certificate	Russian language	1982	I.M. Gubkin Institute of the Petrochemical and Gas Industry (*Grande École*, or higher school), Moscow, USSR

Professional training

Year	*Type of course*	*Duration*	*Topic*	*Place*
1983	Training	9 months	– Petroleum geology – Field technology – Introduction to the petroleum business	Elf-Serepca Company, B.P. 2214, Douala
1986	Seminar	1 month	Calculation of petroleum reserves	I.M. Gubkin Institute of the Petrochemical and Gas Industry, Moscow, USSR
1992	Training	1 month	PRIMA	Institute of Management, Yaoundé
1993	Training	1 month	Project management	Institute of Management, Yaoundé
1994	Training	1 week	Introduction to the CIMENCAM cement company	CIMENCAM, Douala, B.P. 1323
1994	Training	1 month	Introduction to the SONEL electric company	SONEL Centre, Ombe/SW
1999	Seminar	1 week in April	Seminar on loss management in the transport of hydrocarbons and in petroleum facilities, given by Hydrac	Hydrac headquarters in Douala
2000	Seminar	1 week in July	Seminar on the application of the new petroleum regime in Cameroon, given by Beicip Franlap of France	National Hydrocarbons Corporation (SNH) headquarters, Yaoundé
2000	Seminar	1 week in November	Seminar on slope-basin depositional systems, given by Phillips Petroleum	Hilton Hotel, Yaoundé

Year	*Type of course*	*Duration*	*Topic*	*Place*
2000	Training	3 months	Bilingual training programme: The New Cambridge English Course	Pilot centre, Yaoundé
2001	Training	1 week in February	Course on seismic attributes and AVO, given by Geo Experts (Phillips)	Hilton Hotel, Yaoundé
2001	Training	1 week in August	Course on mapping subsurface structure, given by Oil and Gas Consulting International (USA)	Hilton Hotel, Yaoundé
2001	General Assembly of the International Oil Pollution Compensation Fund (IOPC Fund)	1 week in October	Presentation, to the IOPC Fund Executive Committee, of letters whereby the State of Cameroon terminated its membership of the 1971 Fund and became a member of the 1992 Fund	London
2003	Ditto	Ditto	Active participation	London

Career profile

Year	*Department*	*Duties*	*Other information*
1982	Department of Mines and Geology		Entry on duty: 10 November 1982
December 1983-December 1984	Department of Mines and Geology	Assigned to the gold project in East Cameroon	East Cameroon gold project with France's Bureau of Geological and Mining Research (BRGM)
January 1984-1985	Department of Mines and Geology	Assigned to the Haut-Lom project	Geological and mining research project in the Haut-Lom/ Adamaoua with France's BRGM
1987	Department of Mines and Geology	Assigned to the project in the Gulf of Mamfe	Ministerial mission for geological and mining research in the Gulf of Mamfe
31 December 1987	Department of Mines, Technology and Industrial Impacts	Appointed Deputy Chief, Mining Technology and Conservation Service	Areas of responsibility: – Quarry exploitation – Mining research – Mining impacts – Mining taxes – Mining regulations

Year	*Department*	*Duties*	*Other information*
2 months in 1996	Department of Mines, Technology and Industrial Impacts	Headed a geological and mining research mission near Lomié, focusing on nickel and cobalt	Provided technical assistance for the Ministry of Mines, Water and Energy to Geovic Cameroon, S.A.B.P. 5839, Douala (USA-based corporation)
October 1995, 1996, April 1998	Department of Mines, Technology and Industrial Impacts	Headed geological expeditions (missions) in the gold-bearing East Province	With the following companies: – Overseas (South Africa) – Burmex (Canada) – Global Mining (USA) – Bema Gold (Canada)
25 March 1998-15 April 1998	Department of Mines, Technology and Industrial Impacts	Geological and mining research in the permit 66 area, Kambele (belonging to Bema Gold)	Bema Gold (Canada)
16 October 1998	Department of Mines and Geology	Appointed Chief of the Hydrocarbons Exploitation Control Service	Areas of responsibility: – Cases of crude oil theft being prosecuted in the Kole, Moudi and Ebome courts – Security of offshore exploitation – Marine pollution by hydrocarbons – Accounting and statistics on hydrocarbons produced by Elf, Pecten and Perenco – Mining revenues
2005	Department of Mines and Geology	Appointed Chief of Service for the monitoring of the exploitation of oilfields and gas fields	Ditto

Other information

Unpublished professional papers

– Elements of strategic prospecting in the Haut-Lom/Adamaoua (Methods and *results)*

– Calculation of petroleum reserves: mining legislation and regulations in Cameroon

Languages (written, read and spoken)

Bassa, Douala, French, English, Russian

Stays abroad

Soviet Union, United States of America, Poland, Czechoslovakia, Germany, Belgium, France, Great Britain, Netherlands, Nigeria

Extra-professional activities

Sports, agriculture, Catholic religion, literature

Lyu Wenzheng (China)

[Original: Chinese and English]

Personal information

Gender:	Male
Year of Birth:	1944
Place of birth:	Chongqing, China
Academic expertise:	Marine geophysics
Employer:	Second Institute of Oceanography, State Oceanic Administration

Current positions

Member, Commission on the Limits of the Continental Shelf

Professor, Research Fellow and Supervisor of Ph.D. Candidates, Second Institute of Oceanography, State Oceanic Administration of China.

Adviser, China Ocean Mineral Resources Research and Development Association(COMRA).

Member, Expert Group on the Deep Sea Vehicle Technology and Equipment Project under the Chinese National High Technology Research and Development Programme.

Member, Expert Group on "Jiao Long" Manned submersible with 7000m.

Part-time Professor, Xiamen University of China.

Educational background

September 1961 to September 1967, Department of Geophysical Prospecting, Beijing College of Geology of China.

September 1975 to December 1976, College of Chemical Engineering, East China University of Science and Technology.

September 1991 to September 1992, Visiting scholar, Research Centre for Geoscience (GEOMAR), Kiel, Germany.

Professional experience:

1970-1977, Seawater Desalination Centre, Second Institute of Oceanography, State Oceanic Administration of China.

1978-present, Centre for Geology and Geophysics, Second Institute of Oceanography (served as Director of Centre from 1986 to 1990), State Oceanic Administration of China.

1996-2000, Chief scientist responsible for research into ocean mineral resource prospecting, COMRA.

1997-present, Member, Commission on the Limits of the Continental Shelf.

2001-2003, Member, Expert Group on Marine Resources Exploitation Technology, under the Chinese National High Technology Research and Development Programme.

2004-2006, Member, Expert Committee on Marine Resources and the Environment under the Chinese National High Technology Research and Development Programme.

2009-present, Adviser, COMRA.

2011-present, Member, Expert Group on the Deep Sea Vehicle Technology and Equipment Project under the Chinese National High Technology Research and Development Programme, and Member of the Expert Group on "Jiao Long" Manned submersible with 7000m.

2012-present, Part-time Professor of Xiamen University of China.

Representative publications

A. Research papers

1. *Survey report on the DY95-6 and 8 Chinese ocean mineral resources exploration and research expeditions* (lead author)
2. *Survey report on the DY95-10 Chinese ocean mineral resources exploration and research expedition* (lead author)
3. *Survey report on the DY95-11 Chinese ocean mineral resources exploration and research expedition* (lead author)
4. *General report on the ocean mineral resources exploration and research project under the ninth five-year plan (item 02)* (lead author)
5. *General report on the Rich Cobalt Crust resources exploration and research project in Pacific* (lead author)
6. *Compilation of documents for the United Nations Commission on the Limits of the Continental Shelf* (first deputy editor)
7 *Report on research under the Chinese National High Technology Research and Development Programme into key technology for multiple-use unmanned deep-sea remotely operated vehicle (ROV) systems* (team leader)

B. Monographs

1. *Polymetallic Nodule Deposit Geology in the China Pioneer Area of the Pacific*, Lyu Wenzheng et al., China Ocean Press, 2008 (in Chinese)
2. Chapter 14: *Characteristics of the distribution and control factors of polymetallic nodules in the western region of the Clarion-Clipperton Fracture Zone (China Pioneer Area)*, in: *Establishment of a Geological Model of Polymetallic Nodule Deposits in the Clarion-Clipperton Fracture Zone of the Equatorial North Pacific Ocean*, International Seabed Authority, 2009
3. *Outer Limits of the Continental Shelf: Interface of Law and Science (translation)*, Lyu Wenzheng et al., China Ocean Press, 2011 (in Chinese)
4. Chapter 6: *Spatial decision support system modelling, in: A Geological Model of Polymetallic Nodule Deposits in the Clarion-Clipperton Fracture Zone*, Huaiyang Zhou & Lyu Wenzheng, ISA Technical Study No. 6, International Seabed Authority, 2010
5. *United Nations Convention on the Law of the Sea 1982, A Commentary Volume II* (translation), Lyu Wenzheng et al., China Ocean Press, 2014 (in Chinese)

6. *United Nations Convention on the Law of the Sea 1982, A Commentary Volume III* (translation), Lyu Wenzheng et al., China Ocean Press, 2016 (in Chinese)

C. Representative academic articles

1. *Characteristics of magnetic lineation and tectonic evolution of the South China Sea basin*, Lyu Wenzheng et al., in: *Acta Oceanologica Sinica*, Vol.9, No.1, 1987 (in Chinese)

2. *Characteristics of the magnetic field of the south east Pacific and its tectonic evolution*, Lyu Wenzheng et al., in: *Proceedings of the First Symposium on Antarctic Research*, Shanghai Science and Technology Press, 1989 (in Chinese)

3. *Variations in seafloor topography and its tectonic origin in the eastern and western parts of the Chinese pioneer area*, Lyu Wenzheng, in: *Proceedings of the COMRA Tenth Anniversary Symposium*, China Ocean Press, 2001 (in Chinese)

4. *Characteristics of polymetallic nodule deposits in the Chinese pioneer area and the exploration strategy for the third phase*, Lyu Wenzheng, in: *Proceedings of the COMRA Tenth-Anniversary Symposium*, China Ocean Press, 2001 (in Chinese)

5. *Characteristics of the distribution of cobalt-rich crusts in the central Pacific seamount zone and preliminary evaluation of prospects for their exploitation as resources*, Lyu Wenzheng, in: *Proceedings of the COMRA Tenth-Anniversary Symposium*, China Ocean Press, 2001 (in Chinese)

6. *Characteristics of the distribution and control factors of polymetallic nodules in the west region of CCFZ (China Pioneer Area)*, Lyu Wenzheng, in: *Engineering Sciences*, vol. 2, Chinese Academy of Engineering, 2004

7. *Opportunities for and challenges to the exploitation of mineral resources in the international seabed area*, Lyu Wenzheng et al., in: *Journal of Central South University*, Science and Technology, Vol. 42, 2011 (in Chinese)

Mazlan bin Madon (Malaysia)

Current Position

Chief Geoscientist, PETRONAS, Kuala Lumpur, Malaysia

Member, Commission on the Limits of the Continental Shelf (2012-2017)

Biodata

Year of Birth: 1961

Place of Birth: Johor, Malaysia

Education

1996 — Doctor of Philosophy: Earth Sciences (tectonics and basin analysis), University of Oxford, United Kingdom

1992 — Master of Science: Geology (sedimentology), University of Malaya, Malaysia

1984 — Bachelor of Science (Hons.) in Geology, University of Southampton, United Kingdom

Professional Profile

Dr Madon is a geologist with 32 years of working experience in the petroleum industry, primarily in a research environment, specializing in regional geological studies, basin analysis, sedimentology, tectonics, structural geology, and reservoir geological studies. His research on sedimentary basins and petroleum systems include exploration and resource assessments for Petronas in its domestic and international ventures in SE Asia, Central Asia, Middle East, and Africa.

Since 2007, he has held the position of Chief Geoscientist, the highest technical position in PETRONAS, Malaysia's national petroleum company, and is currently attached to the Basin Strategy and Management department which oversees the exploration activities in Malaysian basins.

Dr Madon has participated in various international conferences and authored many technical papers on geology, sedimentology, and petroleum geology in national and international journals. He is the main author in Petronas' publication on "Petroleum Geology and Resources of Malaysia" published in 1999, which is a major source of reference for petroleum geologists in the country.

Besides working as a petroleum geologist in PETRONAS, Dr Madon has served as panelist on the Industry Advisory Panels of several universities in Malaysia — University Malaya (2010), University Teknologi Petronas (since 2011), and Universiti Malaysia Terengganu (2016). He has also served as adjunct lecturer, supervisor and examiner for undergraduate and postgraduate geoscience programmes at various universities, including University Teknologi Petronas (2005/6), University of Science Malaysia (2005/6), and University of Malaya (2005).

In 2008-2009 he was involved in the Malaysian Continental Shelf Project as a geological expert tasked to review and provide geological and geophysical inputs to the drafting of the joint submission by Malaysia and Vietnam to the Commission on the Limits of the Continental Shelf (CLCS).

In 2013, Dr Madon was elected as Fellow of the Academy of Sciences Malaysia in recognition of his contributions to the development of the geological sciences in the country.

As member of the Commission on the Limits of the Continental Shelf (CLCS)

Dr Madon served as member of the CLCS for the term 2012-2017. During his term of office, he was involved as member of subcommissions in the consideration of the submissions made by: Russian Federation — partial revised submission in respect of the Okhotsk Sea and partial revised submission in respect of the Arctic Ocean; Brazil — partial revised submission in respect of the Brazilian Southern Region; The Cook Islands — concerning the Manihiki Plateau; Argentina; Argentina — partial revised submission; Kenya; and Mauritius – in the region of Rodrigues Island.

Professional Affiliations and Society Activities

1. Geological Society of Malaysia (GSM)

- President (2013/14-present)
- Vice President (2010/11 to 2012/13)
- Council Member (1991/92, 1998/99, 2009/10 to present)
- Chairman of Stratigraphy and Sedimentology Working Group (1991/92)
- GSM Editorial Advisory Board Member (1993-1999)
- Assistant Secretary (1998/99).
- Petroleum Geology Conference & Exhibition Committees (2008, 2009)
- Life member since 1992

2. Institute of Geology Malaysia (IGM)

- Council Member (1997/98, 1998/99), member since 1997
- Chairman of Oil & Gas Technical Committee (1997/98, 1998/99).

3. American Association of Petroleum Geologists (AAPG)

- Active Member
- Elected Delegate for Asia Pacific to the AAPG House of Delegates (2014/15)

Awards

2013 — Fellow of the Academy of Sciences Malaysia

2013 — Petronas "Exemplary Line Trainer Award" for SKG09 (Geoscience)

2013 — Petronas SKG09 Geoscience "Special Recognition Award" for serving as an elected member of the Commission on the Limits of the Continental Shelf

2011 — Petronas "Best Line Trainer- Role Model" Award for SKG09 (Geoscience)

Publications

Main author and co-editor of book, "The Petroleum Geology and Resources of Malaysia", published in 1999, by PETRONAS. (contributed 14 out of 27 chapters).

Madon, M., 1997. The kinematics of extension and inversion in the Malay Basin, offshore Peninsular Malaysia. Geol. Soc. Malaysia Bull., 41, 127-138.

Madon, M. and Watts, A.B., 1998. Gravity anomalies, subsidence history, and the tectonic evolution of the Malay and Penyu Basins. Basin Research, 10, 375-392.

Madon, M., 2006. Overpressure history of the Malay Basin, offshore Peninsular Malaysia. Geol. Soc. Malaysia Bull., 49, 135-144.

Madon, M., 2007. Overpressure development in rift basins: an example from the Malay Basin, offshore Peninsular Malaysia. Petroleum Geoscience, vol. 13, pp. 169-180.

Madon, M. and Abdul Hadi Abd Rahman, 2007. Penecontemporaneous deformation in the Nyalau Formation (Oligo-Miocene), central Sarawak. Geol. Soc. Malaysia Bull., 53, 67-73.

Madon, M., 2010. Submarine mass-transport deposits in the Semantan Formation (Middle-Upper Triassic), central Peninsular Malaysia. Geol. Soc. Malaysia Bull. 56, 15-26.

Madon, M., Kim, C.L. and Wong, R., 2013. The structure and stratigraphy of deepwater Sarawak, Malaysia: implications for tectonic evolution. Jour. of Asian Earth Sci., 76, 312-333.

Conference Presentations/Abstracts

Madon, M., 1993. Structural evolution of Penyu Basin, offshore Peninsular Malaysia. Geol. Soc. London Conf. "Tectonic evolution of SE Asia", London, 7-8 Dec 1993.

Madon, M., 2005. Overpressure development in rift basins: an example from the Malay Basin, offshore Peninsular Malaysia. International Conference "Return to Rifts — the next wave! Fresh Insights into the Petroleum Geology of Global Rift Basins, 5-7 April 2005, Geological Society of London, Burlington House.

Madon, M., Hasnol Hady Ismail, and Zainol Affendi Abu Bakar, 2008. Turbidites and mass transport deposits in the Semantan Formation (Middle-Upper Triassic), central Peninsular Malaysia. AAPG Annual Conv., San Antonio, Tx., April 20-23, 2008.

Madon, M, Abolins, P, & Abu Hassan, R., 2009. The Northern Malay Basin: Petroleum Systems and Remaining Potential. AAPG Annual Conv., Denver, Co., June 7-10.

Madon, M., 2013. Geology and seabed resources in the South China Sea: a Malaysian perspective. Seminar on " What's to be done towards the development of natural resources n the continental shelf for the future" by Japanese Ocean Policy Research Foundation, Tokyo, 10 January 2013.

Estevão Stefane Mahanjane (Mozambique)

Year of Birth: 1974

Place of birth: Mozambique

Goals: Re-election of membership of the UN Commission on the Limits of the Continental Shelf, 2017- 2022

Professional career

2001 onward **Chief Geoscientist, Instituto Nacional de Petróleo**
Ministry of Mineral Resource and Energy, Mozambique

2012-2017 **Member of the United Nations Commission on the Limits of the Continental shelf [CLCS]**

2006 onward **Member of the National task force for delimitation of the outer limits of the Mozambican Continental Shelf (CoPePlaC)**
Co-author of the Mozambican submission on the extended continental shelf, July 2010

2007 onward **Teaching assistance and professor at the national Eduardo Mondlane University, Mozambique**
Graduate programs in geology and Postgraduate master of Petroleum Engineering programs

2015 onward **Reviewer of manuscripts in peer scientific journals**
Marine and Petroleum Geology; and Marine geophysical Research

Education and training

01/2011-06/2014 **Doctorate (PhD) Program**
Gottfried Wilhelm Leibniz Universität Hannover, Institut Für Geologie, Hannover, Deutschland

2002 **Postgraduate in Petroleum programs (Bsc Honours)**
University of Cape Town, South Africa

1994-1999 **Graduate in Geological Sciences program**
Universidade Eduardo Mondlane, Maputo, Moçambique

Guest speaker in the international conferences

- Invited speaker — 2nd World Congress on Petroleum and Refinery, June 1-3, 2017, Osaka, Japan
- Invited speaker — 4th International Conference on Geology and Geoscience, at Dubai, UAE, April 27-28, 2017.
- Invited speaker/delegate — 2nd World Congress and Expo on Oil, Gas and Petrochemistry, November 28-30, 2016, Abu Dhabi, UAE
- Invited speaker — International Conference on Gas, Oil and Petroleum Engineering (GOPE-2016), Las Vegas, USA, November 14-16, 2016.
- Guest speaker — 35th International Geological Congress, 27 August-4 September 2016
- Guest speaker — PAMELA Seminar, 26-28 January 2016 — Océanopolis, Brest, France
- Guest speaker — Oil & Gas Summit (Cape Town), May 24-26, 2015

- Guest speaker and panellist — 2nd Deepwater East & Southern Africa Congress (Maputo), April 14-15, 2015
- Guest speaker — 2nd Geology Congress of Mozambique and 12th Geochemistry Congress of Portuguese Speaking Countries (Maputo), September 9-11, 2014
- Guest professor — Winter School on oil and gas exploration and production (Maputo), July 09-18, 2014
- Guest speaker — 3rd International Symposium on scientific and legal aspects of the Continental Shelf Regimes and Space (Beijing, China), 22-23 November 2012

Scientific publications

1. **Mahanjane, E.S. and Chao Peng** (ongoing study). Magma-poor rifting, a comparative study between the Northern Mozambique Basin and Northern South China Sea.
2. **Mahanjane, E.S. and Macuvele, A.**, 2016. The Influence of the Davie Fracture Zone in the petroleum systems, offshore East African Mozambique margin. 35th International Geological Congress (IGC) 27 AUGUST-4 SEPTEMBER 2016, CAPE TOWN, SOUTH AFRICA. http://www.35igc.org/;
3. **Reeves, C.V., Teasdale, J.P., and Mahanjane, E.S. 2016.** Origins of the East Africa margin: Prolonged rifting preceded initiation of transforms in the Kimmeridgian. East Africa from Research to Reserves, 13-15 April 2016. The Geological Society, Burlington House, Piccadilly, London. www.geolsoc.org.uk/petroleum;
4. **Reeves, C.V., Teasdale, J.P., and Mahanjane, E.S. 2016.** Insight into the Eastern Margin of Africa from a new tectonic model of the Indian Ocean. Transform Margins: Development, Controls and Petroleum Systems. Geological Society, London, Special Publications, 431, http://doi.org/10.1144/SP431.12;
5. **Franke, D., W. Jokat, S. Ladage, H. Stollhofen, J. Klimke, R. Lutz, E.S. Mahanjane, A. Ehrhardt, and B. Schreckenberger, 2015.** The offshore East African Rift System: Structural framework at the toe of a juvenile rift, Tectonics, 34, doi:10.1002/2015TC003922;
6. **Reeves, C.V., Teasdale, J.P., and Mahanjane, E.S., 2015.** Insight into the East Coast of Africa from a new tectonic model of the early Indian Ocean. Geological Society of Houston/Petroleum Exploration Society of Great Britain, London, 2015 September 2-3;
7. **Mahanjane, E.S.**, 2015. The East African Mozambique margin: Under-explored potential for hydrocarbons. Deepwater East & Southern Africa Congress 2015. April 14th-15th, Maputo, Mozambique. www.szwgroup.com/deepwater-east-southern-africa-congress-2015/
8. **Mahanjane, E.S., 2014.** Evolução da margem passiva vulcânica de Moçambique e sua implicação para o sistema de petróleo. Resumo apresentado no 2º Congresso nacional de Geologia de Moçambique. Maputo, 8-11 de Setembro de 2014;
9. **Mahanjane, E.S., 2014.** Recursos gológicos da plataforma continental, uma visão sobre o seu potencial em Moçambique. Resumo apresentado no 2º Congresso nacional de Geologia de Moçambique. Maputo, 8-11 de Setembro de 2014;

10. **Mahanjane, E.S. 2014.** The evolution of the East African margin offshore Mozambique: Geotectonic history and petroleum system analysis. Gottfried Wilhelm Leibniz Universität Hannover. PhD dissertation;

11. **Mahanjane, E.S., D. Franke, D., Lutz, R., Winsemann, J., Ehrhardt, A., Berglar, K., and Reichert C. 2014.** Maturity and petroleum systems modelling in the offshore Zambezi Delta depression and Angoche basin, northern Mozambique basin. Journal of Petroleum Geology, Vol. 37 (4), October 2014, pp 329-348;

12. **Mahanjane, E.S and Franke, D. 2014.** The Rovuma Delta deep-water fold-and-thrust belt, offshore Mozambique, Tectonophysics 614 (2014) 91–99. doi:10.1016/j.tecto.2013.12.017;

13. **Mahanjane, E.S., 2014.** The Davie Fracture Zone and adjacent basins in the offshore Mozambique Margin — A New insights for Hydrocarbon Potential. Marine and Petroleum Geology 57 (2014) 561-571;

14. **Reeves, C. and Mahanjane, E.S., 2013.** Mozambique and its role in the downfall of Gondwana. Geological Society of Houston/Petroleum Exploration Society of Great Britain, London, 2013 September 11-12. http://pesgb.org.uk/events/event-165/;

15. **Anderson, L., Caillot, A. Gatter, L., Barrere, C., Grimmer, J., and Mahanjane, E.S., 2013.** Rifting of the Zambezi Delta region, northern Mozambique Basin and its implications for a Jurassic marine source rock. Geological Society of Houston/Petroleum Exploration Society of Great Britain, London, 2013 September 11-12. http://pesgb.org.uk/events/event-165/;

16. **E.S. Mahanjane, M. Achimo, M. Block, N. Ott, S. Žarić, and C. Reichert, 2013.** Lava flows interbedded in the sedimentary sequence of the southernmost Mozambique Basin — **A challenge for the application of the Gardiner Formula**. Third International Symposium on Scientific and Legal Aspects of the Regimes of the Continental Shelf and the Area. Beijing 22-23 November, 2012;

17. **Mahanjane, E.S., 2013.** Corrigendum to "A geotectonic history of the northern Mozambique Basin including the Beira High e A contribution for the understanding of its development" [Mar. Pet. Geol. 36 (2012) 1-12]. DOI of original article: http://dx.doi.org/10.1016/j.marpetgeo.2012.05.007;

18. **Mahanjane, E.S., 2012.** A geotectonic history of the northern Mozambique Basin including the Beira High — A contribution for the understanding of its development. Marine and Petroleum Geology 36 (2012) 1-12. doi:10.1016/j.marpetgeo.2012.05.007;

19. **Reichert, C., Neben, S., et al., 2008.** Cruise Report, BGR07. R/V MARION DUFRESNE CRUISES MD 163 & MD 164. PROJECT MOBAMASIS;

20. **Mahanjane, E.S., 2002.** "SEA LEVEL: Its influence on sedimentary processes and sedimentary facies distribution in the offshore Zambezi Delta (Mozambique)". Thesis (University of Cape Town, South Africa);

Jair Alberto Ribas Marques (Brazil)

Year and place of birth:	1946, Rio de Janeiro, Brazil
Organization:	Brazilian Hydrographic Service (Directorate of Hydrography and Navigation)
Current position:	Law of the Sea Technical Adviser
Overview of expertise:	Hydrography/Bathymetry
Summary:	Hydrographer Maritime Boundary expertise Bathymetry/Foot of the continental slope (UNCLOS art.76)

Academic Background

Doctorate Degree in Marine Sciences, Policy, Strategy and Decision Making, Brazilian Naval War College, 1997 and United States Naval War College, 1998

Master Degree in Marine Sciences, Brazilian Naval War College, 1986

Degree in Hydrography and Oceanographic Sciences, Brazilian Hydrographic Service (Directorate of Hydrography and Navigation), 1975

Degree in Marine Sciences, Brazilian Naval Academy, 1971

Professional Activities

2012 to date	Member of the Commission on the Limits of the Continental Shelf
2010 to date	General Coordinator of the Operational Group on the outer limits of the Brazilian Continental Shelf
2010-2015	Adviser for the Brazilian Continental Shelf Survey Project of the Directorate of Hydrography and Navigation
2004-2008	Adviser on the Maritime Affairs to the Brazilian International Energy Company (PETROBRAS) in the Campus Basin
2004	Director of the Directorate of the Navy Civilian Personal
2003	Head of the Organizational Department of the Brazilian Naval Operations Command
2000-2002	Director of the Brazilian Hydrographic Center
1999	Deputy Adviser for Policy & Strategy of the Brazilian Navy Major Staff
1996	Head of the Brazilian Delegation to the World Fisheries Congress Developing and Sustaining Fisheries Resources — Brisbane — Australia
1996	Executive Secretary for the Executive Group for Fisheries in the Brazilian Navy
1995	Director of the Brazilian Oceanographic Database in the Directorate of Hydrography and Navigation
1993-1994	Scientific Coordinator during the "Almirante Câmara" Survey of the Brazilian Continental South Margin

1993-1994	Commander of the Oceanographic Ship "Almirante Câmara" (Brazilian South Margin Surveys)
1989-1992	Member of the Brazilian Delegation, as representative of Secretariat of the Interministerial Commission for the Resources of the Sea, for the International Seabed Authority Meeting; held in New York, EUA and Kingston, Jamaica
1989-1992	Head of the Executive Committee on the Outer Limit of the Brazilian Continental Shelf
1989-1992	Under-Secretary of the Interministerial Commission for the Resources of the Sea
1987-1988	Commander of the Hydrographic Ship "Argus"; Amazon Surveys
1987-1988	Head of the Brazilian Navy "Amazon Survey Commission" including the Amazon Deep Sea Fan
1980-1983	Adviser Officer of the Commander of Naval Operations (CNO) of the Brazilian Navy
1979-1980	Commander of the Hydrographic Ship "Nogueira da Gama", Amazon Surveys and Amazon Deep Sea Fan
1975-1980	Technical activities in the Brazilian Hydrographic Service (Directorate of Hydrography and Navigation)

Meeting and Congress

4th International Symposium on Scientific and Legal Aspects of the Regimes of the Continental Shelf and the Area

1st Brazilian Congress of Law of the Sea

XX Annual Meeting of the Geology and Geophysics Program

Annual Interchange of Oceanographic Data Seminar

Extraordinary Meeting of the International Commission for Atlantic Tuna

4th Meeting of the United Nations for Sustainable Development

Lectures

2014	Marques, J.A.R., "Brazil beyond 200M" The Brazilian Continental Shelf Delimitation -Legal Aspects, presented at the University of Sao Paulo
2013	Marques, J.A.R., "Brazil beyond 200M" The Brazilian Continental Shelf Delimitation -Legal Aspects, presented at the Brazilian Naval War College
2011	Marques, J.A.R., "Brazil beyond 200M" The Brazilian Continental Shelf Delimitation -Legal Aspects, presented at the National Conference on the Defense and Maritime Protection
1999	Marques, J.A.R., "Antarctic and the Brazilian Interests"
1996	Marques, J.A.R., "Capture and Productivity of the Tuna Fish in Brazil"
1991	Marques, J.A.R., "Brazilian Antarctic", presented at the Man of the Year Meeting

1989 Marques, J.A.R. and Albuquerque, A. "Delimitation of the Brazilian Continental Shelf", presented at the Geophysics Brazilian Society Meeting

Decorations

Military Medal, 3 Stars (40 years of service at the Brazilian Navy), Brazil

Mariner Merit Medal, 4 Anchor (more than a thousand days at sea), Brazil

Tamandaré Merit Medal (Patron of Brazilian Navy), Brazil

Naval Merit Medal, Commander Level, Brazil

Cartographic Merit Medal, Commander Level, Brazil

Marcin Mazurowski (Poland)

Year of Birth: 1974

Place of Birth: Goleniow, Poland

Languages: Polish (native tongue), English, Russian

Qualifications

MSc Geology (Hydrogeology), University of Wroclaw, Poland

Graduate diploma — Underground Hydrocarbons Storage — AGH University of Science and Technology, Krakow (Cracow), Poland

Career summary

Jun. 2016-present — Ministry of the Environment

- Deputy Director, Department of Geology and Geological Concessions

Dec. 2008-Jun. 2016 — PGNiG (Polish Oil and Gas Company)

- specialist geologist in Department of Underground Gas Storage
- specialist geologist in Department of Production Operation
- plenipotentiary of the Director, head of HSE section,
- co-author and work package leader in the European SiteChar project, dedicated to set the criteria for characterization of sites for geological storage of CO2, founded by the European Commission under the Seventh Framework Programme

Feb. 2002-Nov. 2008 — Polish Geological Institute

- research scientist
- fellow of Marie Curie actions – Research Fellowship Programme under the EU's Framework Programme for Research and Technological Development-at Freie Universitaet Berlin, Germany; Ludwig-Maximilian University of Munich, Germany; Aarhus University, Denmark.
- co-author of the MELA — Morphotectonic Map of European Lowland Area — project concentrated on activities of deep geological structures in connection with active surface and subsurface processes.

Publications

Mazurowski M., Schiewe M. (2006) "Hydrogeological Conditions of Lower Warta River Valley (W Poland)" Proceedings 5th Eurpean Congress on Regional Geoscientific Cartography and Information Systems. Barcelona 2006.

"Katalog obiektów geoturystycznych w Polsce" (2006) T. Słomka i inni. Kraków: AGH, Wydział Geologii, Geofizyki i Ochrony Środowiska.

O. Juschus, M. Mazurowski, J. H. Schroeder, W. Dominik (2007) "3D-Model of Quaternary Deposits along Lower Oder- Odra-Valley" Geology cross-bordening the Western and Eastern European Platform. Schriftenreihe der Deutschen Gesellschaft für Geowissenshaften, H.53.

Holzbecher E., Mazurowski M., Kohfahl C., Bącik A., Dobies M. (2007) "Double Diffusive Convection above a Saltdome" Proceedings 2nd International MELA

Conference Glaciotectonic structures, palaeobasins and neotectonic setting, Vilnius 2007

Juschus O., Mazurowski M., Schroeder J. H., Dominik W. (2007) "3D-Model of Quaternary Deposits along Lower Oder/Odra Valley — Methodological Aspects and Problems" Proceedings 2nd International MELA Conference Glaciotectonic structures, palaeobasins and neotectonic setting, Vilnius 2007

Olaf Jushus, Marcin Mazurowski, Justyna Relisko-Rybak, Johannes H. Schroeder, Wilhelm Dominik (2008) "3D- model of Quaternary deposits along Lower Odra Valley" Cartographical approach of the morphotectonic of European Lowland Area. Proceedings 3rd International MELA Conference: Cartographical approach of the morphotectonic of European Lowland Area.. Międzyzdroje 2008

Ekkehard Holtzbecher, Claus Kohfahl, Aneta Bącik, Magdalena Dobies, Michael Schneider, Marcin Mazurowski (2008) "Double diffusive convection modelling of deep thermohaline circulation" The 33rd International Geological Congress. Oslo, Norway, 6 -14 August 2008. under the patronage of UNESCO. Oslo: United Nations Educational, Scientific and Cultural Organization, 2008.

Aneta Bącik, Magdalena Dobies, Klaus Kohfahl, Ekhard Holzbecher, Marcin Mazurowski, Michael Schneider (2008) "An assessment of the salt structures, dislocation zones, and marine water influence on the groundwater chemistry within the chosen areas of the Western Pomerania" Proceedings 3rd International MELA Conference: Cartographical approach of the morphotectonic of European Lowland Area.. Międzyzdroje 2008

Aneta Bącik, Magdalena Dobies, Marcin Mazurowski, Claus Kohfahl, Ekkehard Holzbecher, Michael Schneider (2008) "Quality of groundwater in vicinity of Kamień Pomorski (NW Poland)" Morphotectonic of Wolin Island and adjacent areas (NW Poland). 3rd MELA Conference. 2008 : field guide. Polish Geological Institut.

Holzbecher, E., C. Kohfahl, M. Mazurowski, A. Bącik, M. Dobies and M. Schneider (2009). "The Sensitivity of Thermohaline Groundwater Circulation to Flow and Transport Parameters: A Numerical Study Based on Double-Diffusive Convection above a Salt Dome "Transport in Porous Media doi: 10.1007/s11242-009-9480-4.

Jarosław Polit, Marcin Mazurowski, Grzegorz Gałek (2010) "Uwarunkowania strategii rozwoju podziemnych magazynów gazu ziemnego w Polsce" Nafta-Gaz. — 2010, R. 66, nr 10,

Florence Delprat-Jannaud, Olivier Vincké, Maxine Akhurst, Suzanne Brunsting, Peter Frykman, Ane Lothe, Marcin Mazurowski, Filip Neele, Samuela Vercelli, Valentina Volpi (2011) "SiteChar — Characterization of European CO2 storage", European Geosciences Union General Assembly, Vienna 2011, Geophysical Research Abstracts Vol. 13

Florence Delprat-Jannaud, Olivier Vincké, Maxine Akhurst, Suzanne Brunsting, Peter Frykman, Ane Lothe, Marcin Mazurowski, Filip Neele, Samuela Vercelli, Valentina Volpi (2011) "SiteChar — A EU project dedicated to the characterisation of European CO2 storage sites" Proceedings 3rd European Conference on CCS Research, Development and Demonstration, London 2011

Florence Delprat-Jannaud, Olivier Vincké, Maxine Akhurst, Suzanne Brunsting, Peter Frykman, Ane Lothe, Marcin Mazurowski, Filip Neele, Samuela Vercelli, Valentina Volpi (2011) "SiteChar Project Presentation" 22nd International Conference Oil-Gas AGH, Kraków 2011

David Cole Mosher (Canada)

[Original: English and French]

B.Sc. (Hons, Acadia), M.Sc. (Memorial), Ph.D. (Dalhousie)

Year of Birth: 1960

Place of Birth: Halifax, Nova Scotia, Canada

Languages: English (native); French (competent)

Academic Qualifications

1993	Ph.D., Oceanography Department, Dalhousie University, Halifax, Nova Scotia (Seismic Stratigraphy of the Ontong Java Plateau)
1987	M.Sc., Department of Earth Sciences, Memorial University of Newfoundland, St. John's, Newfoundland (Sediment stability of the Verrill Canyon Area, Scotian Slope)
1983	B.Sc. (Hons), Geology, Acadia University, Wolfville, Nova Scotia

Career Summary

2015-Present	Full Professor, University of New Hampshire, Department of Earth Sciences and Center for Coastal and Ocean Mapping, Durham, New Hampshire, U.S.A.
2012-2015	Program Manager, UNCLOS Program, Geological Survey of Canada (Atlantic), Natural Resources Canada, Dartmouth, Nova Scotia, Canada
2000-present	Adjunct Professor, Department of Oceanography and Earth Sciences, Dalhousie University, Halifax, Nova Scotia
2000-2012	Senior Research Scientist, Geological Survey of Canada (Atlantic), Natural Resources Canada, Dartmouth, Nova Scotia
1993-2000	Research Scientist, Geological Survey of Canada (Pacific), Natural Resources Canada, Sidney, British Columbia, Canada
	Adjunct Professor, School of Earth and Ocean Sciences, University of Victoria, Victoria, British Columbia
1986-1989	Research Assistant, Atlantic Geoscience Centre, Department of Energy, Mines and Resources, Dartmouth, Nova Scotia

Professional Associations

- American Geophysical Union, since 1990 (Sections: Marine Geology and Geophysics, Ocean Sciences, Tectonophysics, Paleoceanography, Natural Hazards)
- Society of Exploration Geophysicists, since 1990
- Atlantic Geoscience Society, since 1984

Principal activities relevant to continental shelf delineation

- 2015-present: Professor with the Center for Coastal and Ocean Mapping at the University of New Hampshire (UNH), conducting extended continental shelf research and mapping and contributing to the U.S. Extended Continental Shelf task force. This includes research and publication on geologic processes to

define the legal continental margin. Co-supervision of one UNH graduate student and direct supervision of staff.

- 2015-present: Chair, international ad hoc committee to develop a surficial geology map for International Bathymetric Chart of the Arctic Ocean.
- 2008-2015: Program manager responsible for the scientific planning, data collection and analysis of Canada's extended continental shelf submissions in the Atlantic and Arctic Oceans. Co-author of Canada's partial submission for the Atlantic Ocean (filed December 2013). Chief Scientist on four international missions to map the continental shelf in the Arctic Ocean and one in the Labrador Sea. Coordinator for four additional missions to map the Canadian continental shelf in the Atlantic and Arctic Oceans. Direct supervision of 12 staff as well as multiple national and international engagements.
- 2008-2013: Canadian representative and presenter at the annual Five-Arctic Nations Extended Continental Mapping meetings (Halifax, St. Petersburg, Copenhagen, Portsmouth, Stavanger); frequent invited speaker at national and international forums.

Other Research Activities

- Application of marine geological, geophysical and geotechnical techniques on rift, subduction and transform margins to understand margin forming processes and potential geohazards that result from these processes.
- Study of modern sedimentary processes to understand ancient deposits and their hydrocarbon reservoir potential, and to identify geohazards and constraints to development. Additionally, study of marine gas hydrates as a potential source of abundant hydrocarbon for future energy resources.

Publication record

- 90 refereed publications, including editor on 4 book volumes
- 66 extended abstracts and reports
- 150 abstracts and conference presentations

Sea-going Experience

- 48 expeditions, including 28 as Chief Scientist
- Co-chief of International Ocean Drilling Program Leg 207 and lead of four international multi-ship expeditions to the Arctic

Executive Positions (abbreviated)

- Executive UNESCO/International Geoscience Program Project 640 (S4Slide) (2015-Present)
- Science Evaluation Panel, Integrated Ocean Drilling Program, ECORD representative (2012-2015)
- Canada's Interdepartmental Committee for Marine Scientific Research Applications (2010-2015)
- Co-Chair, UNESCO/International Geoscience Program Project 585 (E-MARSHALL) (2010-2015)

- Vice-President, President, and Past President, Atlantic Geoscience Society (2007-2011)
- German Science Foundation (DFG) Priority Program International Ocean Discovery Program, Research Selection Committee (2005-2016)
- National Roundtable, Seismic Impact on Marine Mammals committee (2004-2006)
- Canadian Merit Scholarship Foundation (LORAN) (2001-2012): Nova Scotia Selection Committee Chair (2004 to 2012); National Selection Committee (2008, 2010)
- President, Marine Geosciences Division (Geological Association of Canada) (1998-2002)

Teaching

- Supervision of 3 Post-Doctoral Fellows, 5 Ph.D., 9 M.Sc. and 7 B.Sc. honours students
- Geological Oceanography, 2015 and 2016 (UNH), 2000-2014 (Dalhousie)
- International Oceans Institute guest lecturer (annual)
- Marine Geotechnique short course University of Stockholm, 1993

Awards

2015 Natural Resources Canada Sector Merit Award

2014 Natural Resources Canada Achievement Award

2011 U.S. National Science Foundation Arctic Service Medal

1989-1992 Natural Sciences and Engineering Research Council of Canada (NSERC) post-graduate scholarship

1983 Texaco Research Scholarship

Selected Relevant Publications

Mosher, D.C., Campbell, D.C., and Piper, D.J.W. (in prep) Geomorphology and deep-water sedimentary processes of the western North Atlantic margin: defining the legal outer edge of the continental margin. In: Mosher, Rebesco, Piper (eds.) Deep Water Clastic Sedimentary Processes. Marine Geology Special Issue.

Coakley, B., Brumley, K, Lebedeva-Ivanova, N. and Mosher, D.C. (in press). Exploring the Geology of the Central Arctic Ocean — Understanding the basin features in place and time. Geological Society of London Special Publication.

Mosher, D.C., Laberg, J-S, Murphy, A. 2016. The role of submarine landslides in the Law of the Sea. In: Lamarche, G., Mountjoy, J. et al (eds). Submarine Mass Movements and Their Consequences VII, Advances in Natural and Technological Hazards Research, Springer, Vol. 32, p. 147-158.

Mosher D.C., Courtney, R.C., Jakobsson, M., Gebhardt, C., Mayer, L. 2015. Mapping the Surficial Geology of the Arctic Ocean: A Layer for the IBCAO. Proceedings of the Arctic Petroleum Conference, March, 2015, Copenhagen. Offshore Technology Conference paper 22561, 7 pp.

Verhoef, J., Mosher, D.C., and Forbes, S., 2014. United Nations Convention on the Law of the Sea and BIO: defining Canada's extended continental shelves. In Voyage of Discovery: Fifty years of marine research at Canada's Bedford Institute of Oceanography (D.N. Nettleship, D.C. Gordon, C.F.M. Lewis, and M.P. Latremouille, Eds.). Bedford Institute of Oceanography — Oceans Association, Dartmouth, N S., p. 407-414.

Selected invited contributions to national and international symposia

2016: Continental Margins of the Arctic Ocean: Implications for Law of the Sea. European Geosciences Union General Assembly 2016, April 17-22, Vienna, Austria.

2015: The role of submarine landslides in the Law of the Sea. International Symposium on Submarine Mass-movements and Their Consequences VII, November 2, Wellington, New Zealand.

2014: 2015: UNCLOS Article 76 and Submarine Landslides. International Oceans Institute, Halifax, Nova Scotia.

2014: A New Wave of Exploration of the Arctic Ocean. Nova Scotia Institute of Science, December 5, Halifax, Nova Scotia.

2012: A Tale of Two Icebreakers: geophysical surveying in the high Arctic. Luncheon speaker. Arctic Technology Conference, December 3, Houston, Texas.

2011: Canada's programme for an Extended Continental Shelf Submission in the Arctic. Geological Association of Canada Annual Meeting, Program with Abstracts, May 24-27, Ottawa, Ontario.

2011: Geologic Mapping of the Arctic Ocean. The Canadian Programme for an Extended Continental Shelf Submission. Nova Scotia Natural History Museum, Beyond the Last Billion Years Lecture Series, February 8.

2009: The Canadian Programme for an Extended Continental Shelf Submission; Canada Basin, Western Arctic. ArcticNet annual Scientific Meeting, December, 8-11, Victoria, British Columbia.

Selected contributions to national and international symposia (first author only)

2015: Geoscience for extended continental shelf mapping in the Arctic Ocean. International Conference on Arctic Margins (ICAM) VII, June 2-5, Trondheim, Norway, Conference Proceedings.

2014: Mapping the surficial geology of the Arctic Ocean for ECS. Program with Abstracts, American Geophysical Union annual fall meeting, December 15-19, San Francisco, Session OS33D-07, Paper 8736.

2013: Submarine Mass Movements in the Law of the Sea. International Symposium on Submarine Mass Movements and Their Consequences. October, 2013, Kiel, Germany.

2012: Stratigraphy and sedimentology of the western Arctic Ocean, IPY2012, International Polar Year: from Knowledge to Action, Conference, Program with Abstracts, Abstract No. 00543, April 22-27, Montreal, Quebec.

2009: The Canadian Programme for an Extended Continental Shelf Submission; Canada Basin, Western Arctic. ArcticNet annual Scientific Meeting, Dec 8-11, Victoria, British Columbia, Programme with Abstracts.

Domingos de Carvalho Viana Moreira (Angola)

Year and place of Birth: 1963, Luanda, Angola

Native Language: Portuguese

Current employment

Member of the Technical Team of the Inter-Ministerial Commission for the Delimitation and Demarcation of the Maritime Space of Angola (CIDDEMA); Coordinator of the Geoscience Area.

Academic background

1982-1987	Degree in Geological Engineering, Freiberg University of Mining and Technology — Germany;
1990-1996	Degree in Geophysics, Agostinho Neto University (UAN)-Luanda, Angola;
2002-2004	Master's Degree in Geoscience, Natural Resources and the Environment (Majors; Petroleum and Gas), Agostinho Neto University (UAN)- Luanda, Angola;
2013	Advanced Studies in Oceanography at the Institute of Studies of the Sea-Admiral Paulo Moreira (IEMAPM) — Cabo Frio, Brazil;
2013	Advanced Studies in Sedimentary Basins at the Rio de Janeiro State University's Department of Oceanography — Rio de Janeiro, Brazil;

Candidate for a PhD in Geological Sciences and Natural Resources of the Sea at the Federal Fluminense University (UFF) Rio de Janeiro, Brazil, with a focus on the designated subjects of Geology, Geophysics and Oceanography.

Professional activities

- Technical Coordinator of the National Groundwater Company Hydro Mines (Ministry of Geo Mines), and of the UNICEF Geological and Geophysical Studies Project for the supply of groundwater to semi-arid zones in the south of Angola (Namibe, Hufla and Cunene)-1987-1991;
- International Applied Hydrology course within the UNICEF Project — Lisbon (Portugal)-1987;
- Participated in the work for the preparation of the GEOLOGICAL MAP (1: 1000.000),

  National Institute of Geology/Angolan Ministry of Geology and Mines-1991-2007;
- Assistant of Applied Mathematics and Geophysics at the Department of Geophysics of the Agostinho Neto University (UAN) 1996-2005;
- Professor of Mathematics and Physics at PUNIV-Luanda Makarenko Institute — Luanda Institute of Normal Education, Institute of Telecommunications (ITEL) — Luanda — 1990-2007;
- Participated in the Training Course on the Guidelines, Scientific Master Lines and Techniques taught to the technicians of the Inter-Ministerial Commission for the Delimitation and Demarcation of the Maritime Space of Angola (CIDDEMA) by the Assistant Director of the Division for Ocean Affairs and

the Law of the Sea (DOALOS) and members of the United Nations Commission on the Limits of the Continental Shelf (CLCS) — 2011;

- Course on Portugal's experience of Delimitation and Demarcation of Maritime Spaces, held in Lisbon (Portugal) and taught by members of the Mission for Maritime Affairs (EMAM) — 2011;
- Course on Delimitation and Border Disputes -Durham, England — 2011;
- Attendant to the land project I sea seismic method and its potential (magnetometry and gravimetry) in the context of the Italian Cooperation/Agostinho Neto University (UAN)-1994-1997;
- Pedagogical Director of the "November 22" Normal Education Institute — Luru1da, Angola — 1995-2002;
- General Director of the Institute of Management Studies — Angolan Ministry of Education — 2006-2007;
- Participated in the Geophysical and Geological Surveys for the Continental Platform Extension Project of Angola (PEPCA) with the cooperation of the Marine Project Management Company (EMGEPRON) of Brazil — 2012-2013;
- Integrated the Geophysical and Geological Surveys conducted by vessels — 2011-2012;
- *Ocean endeavour* — Gardline Hydro and Princess/CGG-Verita — 2012-2013;
- Member of the CIDDEMA group (France) for the Processing of Geological and Geophysical Data acquired under the PEPCA, in Paris — 2012;
- Member of the Angolan delegation to Namibia to exchange experiences on the submission of Namibia — 2011;
- Integrated the Angolan delegation at the Meeting of States Parties to CNUDM in New York in 2011, 2012, 2013, 2014, 2015 and 2016;
- Member of the Technical Borders Group and Baselines Team, in particular for Top-Hydrographical, Assembly and tide gauges installation maritime data acquisition of Angola, and the Marcos Geodetic Surveys/Datum CAMACUPA transformation parameters for WGS84 in all the Angolan territory-2012-2016;
- Member of the technical team for the preparation of the Presentation of Angola's Submission, Luanda-2014-2015;
- Member of the Angolan delegation to present Angola's Submission, drafted by the Minister of National Defence, to the United Nations Commission on the Limits of the Continental Shelf in New York on August 24th, 2015;
- Member of the technical group of CIDDEA;
- Placed in the Secretariat of CIDDEMA as Coordinator of the Geoscience Area;

Additional information

Books prepared for publication:

- Submarine Wide Range and its Importance for the Definition of Exterior Limits of Coastal States (2016).
- Submarine Range and the Angolan Continenta! Shore: Morphological and Seismic Characterization and the Relation between Tectonic Evolution — Sedimentation Shore (2016).
- Angolan Submarine Range and its Influence and Detem1ination on the Outer Limit of the Continental Shore (2016).

Simon Njuguna (Kenya)

Name: Simon Njuguna

Profession: Geologist, Environmental scientist and Urban and Regional Planner

Year of Birth: 1970

Languages: English, Kiswahili (written and spoken)

Simon Njuguna is currently a sitting Member of the Commission on the Limits of the Continental Shelf (CLCS) since his election in June 2012. He has served in seven subcommissions including being a chair to one and a vice chair to another

He has a clear understanding of the United Nations Convention on the Law of the Sea (UNCLOS) and especially implementation of article 76 and the Statement of Understanding.

Has worked as a geoscientist for over 20 years, has vast practical experience in geological sciences and is a GIS specialist.

Educational background

Professional training

September 2000 — September 2001, International Institute of Aero-surveys and Geosciences (the Netherlands), Professional Masters (PMSc) in Geo-information Science and Earth observation

University level

- October 1996-November 1999, University of Nairobi, Masters of Arts in Physical Planning
- November 1990 to July 1995, University of Nairobi, First class honours Bachelor of Science degree in Geology

Implementation of Article 76 of UNCLOS

Implementing the Commission's mandate: Considering and making recommendations on data and other materials submitted by States on the respective limits of the continental shelf, in accordance with article 76 and Annex II (Statement of Understanding) of UNCLOS.

Article 76 specific Training and symposia

(a) Training

- In-house Training, Kenya – Induction course to UNCLOS and Article 76 (year 2006)

United Nations offices in Nairobi — Parts 1 & 2 UNEP Shelf Programme, Desktop Preparation workshop for East African region

UNEP Shelf Programme- Arendal, Norway — Technical Aspects of the interpretation of marine geophysical data (Jan-Feb 2008)

Technical data requirements and the documentation of submission (Jan-Feb 2008)

Geocap Software Training, Kenya — Geocap Software main functionalities of the Shelf Mo0064ule Sept 2007 (it is a major delineation software)

(b) Symposia, seminars, workshops and meetings

Buenos Aires Argentina-	Law of the Sea, Resources of the sea bed, Aspects of economics and conservation (March 2006)
Kingston, Jamaica -	International Sea bed authority meeting (June 2006)
Geocap Offices, Oslo, Norway	Geocap training recap and feedback session (May 2007)
Maputo, Mozambique	Commonwealth Seminar for Coastal and Landlocked States of Africa on the Implementation of the UNCLOS (May 2007)
New York USA	A member of the Kenyan delegation to State Parties Meetings on UNCLOS for the 18th, 19th and 20th meetings
New York USA	Made the technical part of initial oral presentation for Kenya's Continental shelf Claim (September 2009)
Buenos Aires Argentina-	Sharing experiences on the delineation of the outer limits of Continental shelf (October 2011)
Various venues in China	A series of 3 symposia entitled "scientific and legal Aspects of the Regimes of Continental Shelf and the Area. (2013-2016)

Employment record

(a) April 2015 to date

Deputy Director- Maritime Unit, Kenya International Boundaries Office, Office of the President

(b) February 2006 March 2015

Taskforce on Delineation of Kenya's Continental Shelf, Presidency and Cabinet Affairs Office

(c) May 2006 to March 2015

Senior Assistant Director- Ministry of Higher Education Science and Technology Directorate of Research Development and Management

(d) March 1997 to February 2006

Geologist- Ministry of Environment and Natural Resources, Mines and Geological Department

(e) Sept 2002 to Sept 2003

Part–time Lecturer- Kenyatta University, Department of Environmental Planning and Management

(f) December 1995 to June 1996

Geologist, Assistant hydro-geologist, Groundwater Survey Kenya Limited

Membership in professional societies

- Geological society of Kenya Professional member
- Geologists Registration Board of Kenya Registered Geologist

National Environmental Management Authority of Kenya	Registered Lead expert EIA/EA

Awards and honours

Accorded, on 12th Dec 2008, the honour and style of The Order of Grand Warrior of Kenya (OGW) by the Head of State for devotion and Commitment to service of the Nation

Some of the relevant compiled reports (unpublished)

Under the Continental Shelf of Kenya Programme;

- Submission on the Continental shelf of Kenya beyond 200nm to the Commission On the Limits of Continental Shelf of the United Nations
- Delineation of Kenya's Outer Continental Shelf Beyond 200nm; Data acquisition report
- Delineation of Kenya's Outer Continental Shelf Beyond 200nm; the Desktop study
- Delineation of Kenya's Outer Continental Shelf Beyond 200nm; Test of Appurtena

Yong Ahn Park (Republic of Korea)

- **Member and Vice-Chairperson, Commission on the Limits of the Continental Shelf (CLCS)**
- **Acting Chairperson, 28th and 29th Session, CLCS**
- **Professor Emeritus, Seoul National University**

Year of Birth: 1937

Languages: Korean, English, German

Educational background

1973 Ph.D. Marine Geology, Kiel University, Federal Republic of Germany

1966 M.S. Dept. of Geology, Brown University, RI, U.S.A.

1961 B.S. Dept. of Geology, Seoul National University, Korea

Current Position

1997–	Member and Vice-Chairperson (since 1999), CLCS
2010–	Senior researcher, Research Institute of Oceanography, Seoul National University
2002–	Professor Emeritus, Seoul National University
2002–	Technical advisor, Qingdao Institute of Marine Geology, Qingdao, China

Professional Experience

2001–2003	President, International Society of Yellow Sea Research
1997–2002	Chairperson, the Korea-China Joint Committee for Basic Scientific Research
1996–2016	Chairperson, IGCP/UNESCO for Korean National Committee
1987–1993	President, Korean Quaternary Association (KOQUA)
1983–1985	President, Korean Society of Oceanography
1979–1982	Advisor for the Law of the Sea, Ministry of Foreign Affairs of the Republic of Korea
1978–1979	Visiting Professor, Duke University, NC, U.S.A.
1967–2002	Professor, Department of Oceanography, Seoul National University

Activities in the Commission on the Limits of the Continental Shelf (CLCS)

Officer of the Commission

1999–2017	**Vice-Chairperson, CLCS**
2011–2012	**Acting Chairperson, CLCS** (28th to 29th Session)

Subsidiary Bodies

1997 Contributor to the development of the Rules of Procedure

1998	Member, working group of the Editorial Committee on the Scientific & Technical Guidelines
1999	Member, Working Group on Training
2002	Member, Vice-Chairperson, Subcommission to consider the submission by Russia
2004	Member, Subcommission to consider the submission by Brazil
2007	Member, Vice-Chairperson, Subcommission to consider the submission by Norway
2007	Member, Vice-Chairperson, Subcommission to consider the submission by France
2009	Member, Vice-Chairperson, Subcommission to consider the submission by Indonesia
2010	Member, Vice-Chairperson, Subcommission to consider the submission by Suriname
2011	Member, Vice-Chairperson, Subcommission to consider the submission by Philippines
2012	Member, Subcommission to consider the submission by the Cook Islands
2013	Chairman, Confidential Committee
2013	Member, Vice-Chairperson, Subcommission to consider the revised submission by Russia
2013	Member, Subcommission to consider the submission by Mauritius
2015	Member, Chairperson, Subcommission to consider the submission by Kenya
2016	Member, Vice-Chairperson, Subcommission to consider the revised submission by Russia
2016	Member, Vice-Chairperson, Subcommission to consider the revised submission by Brazil

Associations

Society for Sedimentary Geology, U.S.A

Korean Society of Oceanography

Geological Society of Korea

Korean Quaternary Association

American Geophysics Union, U.S.A

International Association of Sedimentologists

Decorations and Awards

1987	Distinguished Scientific Paper Award, Korean Society of Oceanography, Republic of Korea
1989	Commendation for Geological Oceanographic excellent research from the President of the Korea Oceanographic Society, Republic of Korea
2001	Order of Service Merit from the President of the Republic of Korea

2001	2000 Outstanding Intellectuals of the 21st Century, International Biographical Centre, England
2006	Decoration and Award for excellent natural science research from the National Academy of Sciences, Republic of Korea
2008	Award from the International Asian Marine Geology Organization
2009	Kublai Khan Gold Medal from Mongolian Academy of Sciences, Mongolia

Major Publications

Prof. Park has published over 130 international and national research papers and books on marine geology and the continental shelves. Notable and relevant works include:

Selected International Academic Research Papers

Park, Y. A., Chang, J. H., Lee, C. H. and Han, S. J., (1996). Controls of storm and typhoon on Chenier formation in Komso Bay, Western Korea, *Journal of Coastal Research*, Vol. 12, No. 4.

Park, Y. A., Lim, D. I., Khim, B. K., Choi, J. Y. and S. J. Doh, (1998). Stratigraphy and sub-acarial exposure of late quaternary tidal deposits in Haenam Bay, Korea (Southwestern Yellow Sea), *Estuarine Coastal and Shelf Science*, Vol. 47.

Park, Y. A., Choi, Jin-Yong and Gao, S., (2001). Spatial variation of suspended particulate matter in the Yellow Sea, *Geo-Marine Letters*, Vol. 20, No. 4.

Choi, Kyung Sik, Kim, Baeck Oon and Park, Y. A., (2001). Late Pleistocene Tidal Rhythmites in Kyunggi Bay, West Coast of Korea: A Comparison with Simulated Rhythmites Based on Modern Tides and Implications for Intertidal Positioning, *Journal of Sedimentary Research*, Vol.71, No.5.

Lim, D. I. and Park, Y. A., (2002). Late Quaternary stratigraphy and evolution of a Korean tidal flat, Haenam Bay, Southeastern Yellow Sea, Korea, *Marine Geology*, Vol. 193.

Selected Books

Park, Y. A., et al., 1996. Principles of Oceanography, (Richard Davis) trans., Korea Textbook Press Inc.

Park, Y. A., et al., 2001. Quaternary Environment of Korea, Seoul National University Press.

Park, Y. A., et al., 2001. Tidal Environment of Korea, Seoul National University Press.

Park, Y. A., et al., 2010. Eodo Island- the last point of Korea, Saet Byoel D&P.

Park, Y. A., 2011. Principles of Oceanography, 2nd ed., Seoul National University Press.

Summary Professor Yong Ahn Park is a Professor Emeritus at Seoul National University, and distinguished marine geologist with extensive expertise in the analyses of scientific data concerning the continental shelf and other geological features of the oceans. He started the teaching of marine geology for the first time in Korea, and established the Department of Oceanography at Seoul National University in 1968, which was the first department of oceanography among Korean

universities. He also has extensive experience in international research cooperation, notably at the International Geosciences Programme (IGCP) and the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO).

Professor Park has served as a member of the CLCS since its inception in 1997, and has made significant contributions to the work of the Commission-the Editorial Committee; the Training Committee; the Confidentiality Committee; and the Subcommissions to consider the submissions made by (1) the Russian Federation, (2) Brazil, (3) Norway, (4) France, (5) Indonesia, (6) Suriname, (7) the Philippines, (9) the Cook Islands, (10) Mauritius, (11) Kenya, and revised submissions by (12) Russia and (13) Brazil as member, vice-chairperson and chairperson. Furthermore, as Acting Chairperson for the 28th session of the CLCS in 2011 and the 29th session in 2012, Professor Park has performed his duties in an impartial, conscientious and honest manner.

Carlos Marcelo Paterlini (Argentina)

[Original: Spanish]

Personal information

Year and place of birth: 1947, Mercedes, Province of Corrientes, Argentina

Academic background

Geodetic and Geophysical Engineer Postgraduate School of Geodetic and Geophysical Engineering and Hydrographic. Engineering, School of Engineering, University of Buenos Aires (1974-1981)

Hydrographic Engineer Postgraduate School of Geodetic and Geophysical Engineering and Hydrographic. Engineering, School of Engineering, University of Buenos Aires (1974-1981)

Surveyor Graduate of School of Engineering, University of Buenos Aires (1967-1973)

Specialization

He specialized in marine geophysics. He also gained extensive experience in marine surveys, including edition, processing and interpretation of data in different environments: coastline, navigable waterways, lakes and deep waters. Also in aeromagnetic surveys.

Professional activity as Member of the Commission on the Limits of the Continental Shelf (CLCS)

Elected Member of the Commission on the Limits of the Continental Shelf (CLCS) in June 2012

He integrated 8 Subcommissions, two as Vice-chairman:

Member of the following Subsidiary bodies:

- Committee on provision of scientific and technical advice to coastal States (Vice-Chairman)
- Editorial Committee (open-ended) (Vice-Chairman)
- Training Committee (open-ended) (Member)

Other professional activities

1975 to date

Scientific Researcher in the Research and Development Track for the Armed Forces, Ministry of Defense, based in the Marine Geology and Geophysics Division of the Oceanography Department of the Argentine Hydrographic Service (SHN). He is currently Principal Researcher/Project Director and Head of the Marine Geophysics Section of the Oceanography Department of SHN.

He has participated in more than 20 oceanographic surveys, some as Chief Scientist, and in joint projects with both national and foreign institution such as Instituto Antártico Argentino (IAA), Lamont Doherty Geological Observatory, USA Naval Research Laboratory and BGR (Germany). He published more than 30 scientific papers and more than 20 technical reports.

2003-2011:

Technical Coordinator National Commission on the Outer Limit of the Continental Shelf (COPLA, Argentina), responsible for managing, monitoring and coordinating various technical tasks.

1976-2002:

He worked extensively on projects aimed at solving practical problems in the construction of large engineering projects of national interest in the coastline and major rivers, and assessor in mining resources.

Academic activity

1987 to date: training course in Oceanography for Argentine Navy command officers. Subject: Marine Geophysics

1996 to date: School of Sea Sciences, Naval University Institute, Argentine Navy. Full Professor. Courses in: Instrument Physics, Topography I and II, Geodetics and Elements of Geophysical Exploration, for the B.Sc. in Cartography

1976 to 2014: School of Engineering, Universidad Católica Argentina. Associate Professor of Topography and Geodetics. Full Professor with tenure since 2008

1991-1994: Technological Institute of Buenos Aires. Associate Professor of Marine Geophysics, Department of Oceanography.

1980-1981: Technological Institute of Buenos Aires. Professor of Magnetism, Department of Hydrography.

1974-1978. Buenos Aires School of Cartography. Substitute Full Professor. Subjects: Photogrammetry and Physics

Significant publications from the past three years

Scientific journals

1. *A contourite depositional system along the Uruguayan continental margin: Sedimentary, oceanographic and paleoceanographic implications (2016). Hernández-Molina, J., Soto, M., Piola, A.R., Tomasini, J., Preu, B., Thompson, P., Badalini, G., Creaser, A., Violante, R.A., Morales, E., Paterlini, M. and De Santa Ana, H. Marine Geology 378 (1): 333–349 DOI: 10.1016/j.margeo.2015.10.008*

Books and book chapters

The Argentina Continental Shelf: Morphology, Sediments, Processes and Evolution since the Last Glacial Maximum. (2014). Violante, R.A., Marcolini, S., Cavallotto, J.L., Paterlini, C.M., Costa, I.P., Laprida, C., Dragani, W., Watanabe, S., Totah, V., Rovere, E.I. and Osterrieth, M.L. En: Continental Shelves During Last Glacioeustatic Cycle: Shelves of the World Reviews. Final Volume of Project IUGG-UNESCO-IGCP 464 "Continental Shelves during the Last Glacial Cycle", A.R. Chivas and F.L. Chiocci (Eds.), Geological Society of London (Publisher), 55-68.

Congresses, symposiums and other scientific meetings

1. *Deslizamientos y drift contorníticos laminares adosados en la Plataforma Continental Argentina frente a Bahia Blanca. (2015).* Costa IP, Violante RA, Paterlini CM Jornadas Nacionales de Ciencias del Mar, Ushuaia, 2015. Summaries book, p. 250.

2. *Interacción entre procesos contorníticos y gravitacionales en el sector de la terraza Ewing (talud continental medio) frente a Bahía Blanca. (2016).* Costa, I.P., Violante, R.A. and Paterlini, C.M. VII Congreso Latinoamericano y XV Reunión Argentina de Sedimentología, Santa Rosa (La Pampa). Acts.

3. *Propuesta de perforación oceánica en el Mar Argentino-Margen continental pasivo-volcánico-Un desafío para la Ingeniería Oceánica.* (2016). Paterlini, C.M. IEE_OES, III Simposio de Ingeniería Oceánica en Sud América. UTN, Buenos Aires, 15-16 june 2016.

4. *Cañón Submarino Mar del Plata: rasgo morfosedimentario, morfotectónico o mixto? (2016).* Sagripanti, L., N. García Chapori, M. Paterlini, R. Violante. VII Congreso Latinoamericano y XV Reunión Argentina de Sedimentología, Santa Rosa (La Pampa), Acts.

Related to Art. 76 UNCLOS

1. *Argentine Submission: The Applicability and the Application of the Evidence to the Contrary.* (2014). Frida Armas and Marcelo Paterlini. The fourth International Symposium on Scientific and Legal Aspects of the Regimes of the Continental Shelf and the Area will be held during 22-23 April, 2014 in Xiamen, China.

2. *The Role of the Foot of the Slope in the Determination of the Outer Limit of the Continental Shelf.* (2014). Frida Armas and Marcelo Paterlini. The International Workshop on the "New Developments on the Low of the Sea. South China Sea Institute of Xiamen University on 24th-25th April 2014, Xiamen, China.

3. *Aspectos Geológicos-Geofísicos Relevantes en la Delineación del Límite Exterior de la Plataforma Continental Argentina-Art 76 CONVEMAR. (2014).* Paterlini, C.M.; Symposium: Geología costera y marina XIX Congreso Geológico Argentino. Córdoba 2-6 june 2014.

4. *Aspectos legales y científicos en la determinación del Límite Exterior de la Plataforma Continental Argentina –art76 CONVEMAR. (2014).* Paterlini, C.M. Invitation of the Asociación Geológica Argentina, Buenos Aires october 2014.

5. *La plataforma continental argentina-Art 76, CONVEMAR: Marco jurídico clave para la soberanía sobre los recursos naturales.* (2016). Paterlini, C.M. IGEBA. 1 July 2016. Buenos Aires.

Recognition by the National Academy of Engineering

Award for co-authoring the best paper on a geophysical subject, "Regional aeromagnetic survey in the northwestern Weddell Sea-Argentine Antarctica".

Membership in scientific societies

Asociación Argentina de Geofísicos y Geodestas (Argentine Association of Geophysicists and Geodesists)

International Association for the Physical Sciences of the Oceans (IAPSO)

International Association of Geomagnetism and Aeronomy (IAGA)

Clodette Raharimananirina (Madagascar)

[Original: English and French]

Personal

Year of Birth: 1959

Professional experience

11/2011	Polytechnic High School of Antananarivo-University of Antananarivo, Madagascar/Pierre and Marie Curie University UMR SISYPHE, Paris VI, France Degree of doctorate on geophysics Mines and petroleum option
04/1988	Faculty of Science, University of Antananarivo, Madagascar Postgraduate of physical sciences Geophysics option
07/1985	Faculty of Science, University of Antananarivo, Madagascar Degree of Master of Science (physics research), Physics-Chemistry option

Professional experience

Current profession

	Head of North and East coast basins study department at the Office of National Mining and Strategic Industries (OMNIS), Madagascar (26 years of experience at OMNIS)
1998-till now	Resource management in Madagascar: – Establishment of report promotion of Madagascar petroleum blocks for international tender – Follow-up of production sharing contracts with oil companies – Follow-up of activities of oil companies operating in Madagascar onshore and offshore sedimentary basins
	Geological interpretation of main seismic data acquired in malagasy sedimentary onshore and offshore basins (Morondava,Majunga, Ambilobe basins)
2014-2017	Participation in Madagascar baseline update project
2014-2015	Participation in United Nations projects related to environmental impact assessments of offshore mining or petroleum activities for the World Ocean Assessment (WOA).
	Comments on the proposed amendment of the Petroleum Malagasy Code by the Ministry at the Presidency in charge of Oil and Mines
Since 2007	Technical application for the establishment of the outer limits of a continental shelf
2004	Electrical survey along the national road RN6, between Port-Bergé and Ambanja (western part of Madagascar, Institute and Geophysical Observatory of Antananarivo (IOGA)
	MNT Gtopo30 (SRTM) data processing covering the North Western part of Madagascar with Surfer V.8.

2000-2001	Thematic applications of GIS using MAPINFO (OMNIS, CAMGC)
1999	Gravity measurements along the eastern coastal part of Madagascar (OMNIS)
1990	Magnetic and gravity survey in Ambanja and Ambilobe areas (northern part of Madagascar), processing and interpretation of data acquired (OMNIS).
	Seismic survey follow-up in Manambolo-Serinam area, south western part of Madagascar (C.G.G/OMNIS)

Research and reports

11/2011	The continental shelf of the extreme south of Madagascar: tectonic and geophysical studies; Doctoral thesis
08/2011	Submission and presentation of the application of the Republic of Madagascar to the Commission of the Continental Shelf Limits for the establishment of the delineation of the outer limits of the Malagasy continental shelf beyond 200 nautical miles
04/2011	Submission to the Commission on the Limits of the Continental Shelf (CLCS) of the outer limits of the extended continental shelf of the Republic of Madagascar (under the Provisions of Article 76 of the United Nations on the law of the sea, 1982)-Executive summary
12/2010	Report on basin analysis in the northern tip of the Ambilobe basin, extreme north part of Madagascar by seismic and geological interpretations (OMNIS)
2007	Report on desktop study on the project "Delineation of the outer limits of Malagasy continental shelf beyond 200 nautical miles" with GRID Arendal- Norway
1998-2007	Seismic and geological interpretations of Mozambique Channel data, Morondava basin in the south western part of Madagascar (OMNIS)
1999-2000	Environmental impact assessment of saphir exploitations in Ilakaka and Ilemby regions (Fianarantsoa province), of Maninday, Sakaraha, Andranolava, and Mahaboboka (Toliara province, southern part of Madagascar)
1999	Environmental impact assessment of beryl and tourmaline exploitations in Sahanivotry Antsirabe region, central part of Madagascar
1998	Dogger delineation and interpretation in the western part of Majunga Central basin, western part of Madagascar (OMNIS) Seismic data reinterpretation of Majunga North basin, western part of Madagascar (OMNIS)
1996	Processing of gravity data acquired in Tsianaloka–Tsimiroro and Ambilobe area with QuickBasic language program, (OMNIS)
1995	Majunga Central basin prospects study by seismic and geological interpretations: Marovoay updip structure, Makia structures, Katsepy structures, western part of Madagascar (OMNIS)

1993	Seismic data interpretation in the well Vohibasia -1 area (L.E.R.G.G.A, University of Bordeaux I)
1990	Report on gravity survey in Ambilobe basin (OMNIS)
1988	Construction of synthetic seismogram in a vertically inhomogeneous and one dimension area by the ray method. Postgraduate report (IOGA)
	Geophysical reconnaissance with electrical and audio magneto-telluric methods in Itasy volcanic area (IOGA/Laboratory of Applied Geophysics, Paris VI)
1986	Measurements and observations in Malagasy magnetic network (IOGA, IPGP)
	Gravity and electrical prospecting on the Observatory site. (IOGA-ORSTOM, Bondy-Paris, France)

Training

11/2015	Training on fundamental concepts of seismic techniques represented by John Randolph (with TGSNOPEC)
02/2011	Training on gravimetry-gradiometry in England (with ARKEX Company)
2008-2010	Training on KINGDOM software and its application on seismic and well data interpretation (SMT- OMNIS)
09/2008	Participation on "Hands on for submission" seminar about UNCLOS 82 – Article 76; (Mozambique)
01/2008	Training course on Comprehensive 2d/3dPAK – EarthPAK by Seismic Micro Technology, Inc.
02-03/2007	Participation in technical workshop on the establishment of the Outer Limits of the Continental shelf, UNEP Shelf Program Part 1 and Part 2 (Antananarivo-Madagascar)
08/2007	Training course on the delineation of the outer limits of the continental shelf beyond 200M and for preparation of submissions to the Commission on the Limits of the Continental shelf (Cape Town-South Africa, August 2007).
2007	Training on GEOCAP software and its application on the delineation of continental shelf beyond 200 nautical miles (GRID-Arendal-Norway)
2006	Training on seismic interpretation with PARADIGM software at Norwegian Petroleum Directorate (Stavanger-Norway)
10/2006	Training on seismic data processing, Houston – Texas (TGSNOPEC)
09/2006	Training on seismic, magnetic and gravity interpretations (Exxon Mobil)
	Participation in Workshop "Development, operations and HSE in the Oil sector for OMNIS-Madagascar" (PETRAD)
04/2005	Participation on Workshop "Petroleum Resource Management and promotion" (PETRAD)

09-10/2005	Training course on SEISVISION, PRIZM, GSEXPlorer by LANDMARK, Halliburton Company
2005	GEOGRAPHIX software application in petroleum exploration (OMNIS)
2004	Training on petroleum contract negotiation (OMNIS)
1999	Training on Geographical Information System: Mapinfo (OMNIS)

Computer skills

Office software applications, GIS software

Language

Fluent in French; proficient in English

Toshitsugu Yamazaki (Japan)

Education

Ph.D., Kyoto University, 1990

B.S., Kyoto University, 1981 (Geology and Mineralogy)

Current Positions

2015-present	Visiting Senior Scientist, Japan Agency for Marine-Earth Science and Technology
2012-present	Visiting Researcher, National Institute of Advanced Industrial Science and Technology
2012-present	Professor, Atmosphere and Ocean Research Institute, University of Tokyo

Professional Experience

2006-2012	Guest Professor, University of Tsukuba
2002-2012	Group Leader, Institute of Geology and Geoinformation, National Institute of Advanced Industrial Science and Technology
2000-2001	Deputy Director, Research Planning Office, Geological Survey of Japan
1994-1995	Visiting Associate, California Institute of Technology
1992-1993	Senior Staff, Science and Technology Agency, Japan
1990-2000	Senior Researcher, Geological Survey of Japan
1981-1990	Researcher, Geological Survey of Japan

Research Activities

My current research interests are mainly focused on: (1) reconstruction of the past geomagnetic field using marine sediments, (2) application of rock magnetism to marine geology and paleoceanography, (3) hotspot motion and mantle dynamics, and (4) origin and development of the Philippine Sea Plate. I have rich experience in seagoing research projects and have participated in 55 research cruises, including 8 led by me as Principal or Co-Principal Investigator. I have involved in the promotion of the Integrated Ocean Drilling Program (IODP) as a co-chief scientist and member of various committees.

Major Research Cruise Experience

Aug. 2014	Japan Sea by R/V Shinsei-maru (KS-14-13 cruise) (Chief Scientist)
Dec. 2010-Feb. 2011	IODP Expedition 330: Louisville Seamount Trail by *D/V JOIDES Resolution* (Co-chief Scientist)
May-June 2008	IODP Expedition 321: Pacific Equatorial Age Transect by *D/V JOIDES Resolution*
Nov.-Dec. 2007	Central North Pacific by /V Yokosuka (YK07-16 cruise) (Chief Scientist)

Oct. 2005	Offshore of New Guinea by *R/V Kairei* (Japan-Indonesia) (Chief Scientist)
Aug.-Sep. 2004	Southeast Pacific by R/V Yokosuka (YK04-08 cruise) (Chief Scientist)
Nov.-Dec. 2003	Mariana Trough by R/V Kairei (KR03-13 cruise) (Chief Scientist)
Jan. 2000	South and Central Pacific by R/V Kairei (KR99-12 cruise) (Chief Scientist)
Dec. 1998	Mariana Trough and Philippine Sea by R/V Kairei (KR98-12 cruise) (Chief Scientist)
Aug.-Oct. 1997	IODP Leg 175: Benguela Current, offshore of Africa by *D/V JOIDES Resolution*
Nov.-Dec. 1993	East Pacific Rise by *R/V Melville* (Japan-US)
July 1984	Japan Trench by *R/V Jean Charcot* (Japan-France)

Professional Service Experiences

2015-present	President, Society of Geomagnetism and Earth, Planetary and Space Sciences
2013-2016	Member, Editorial Board, Earth, Planets and Space
2012-present	Member of Council, Paleosciences Society
2009-2011	Member of IODP Science Planning Committee
2009-2011	Director of IODP Division, Japan Drilling Earth Science Consortium
2008-2015	Member, Editorial Board, Island Arc
2006-present	Member of IUGG/IAGA subcommittee, Earth and Planetary Science Committee, Science Council of Japan
2006-2011	Member of Review and Advisory Committee, University of Minnesota
2003-2007	Chair of Steering Committee, Earth Planets and Space
2003-2006	Member of IODP Science Steering and Evaluation Panel

Professional Associations

The Society of Geomagnetism and Earth, Planetary and Space Sciences

American Geophysical Union

Paleosciences Society

Geological Society of Japan

Japan Society for Marine Surveys and Technology

Recent Selected Publications

Shimano, T., and Yamazaki, T. (2016) Environmental rock magnetism of Cenozoic red clay in the South Pacific, *Geochem. Geophys. Geosyst.*, 17, 1296-1311.

Horiuchi, K., Kamata, K., Maejima, S., Sasaki, S., Sasaki, N., Yamazaki, T., Fujita, S., Motoyama, H., and Matsuzaki, H. (2016) Multiple ^{10}Be records revealing

the history of cosmic-ray variations across the Iceland Basin excursion, *Earth Planet. Sci. Lett.*, 440, 105-114.

Tauxe, L., and Yamazaki, T. (2015) Paleointensities, in *Treatise on Geophysics, 2nd edition, vol. 5*, Elsevier, pp. 461-509.

Sasaki, T., Yamazaki, T., and Ishizuka, O. (2014) A revised spreading model of the West Philippine Basin, *Earth Planets Space*, 66:83.

Yamazaki, T., and Yamamoto, Y. (2014) Paleointensity of the geomagnetic field in the Late Cretaceous and earliest Paleogene obtained from drill cores of the Louisville seamount trail, *Geochem. Geophys. Geosyst.*, 15, 2454-2466.

Veloso, E.E., Hayman, N.W., Anma, R., Tominaga, M., Gonzalez, R.T., Yamazaki, T., and Astudillo, N. (2014) Magma flow directions in the sheeted dike complex at superfast spreading mid-ocean ridges: Insights from IODP Hole 1256D, Eastern Pacific, *Geochem. Geophys. Geosyst.*, 15, 1283-1295.

Yamamoto, Y., Yamazaki, T., Acton, G., Richter, C., Guidry, E., and Ohneiser, C. (2014) Paleomagnetic study of IODP Sites U1331 and U1332 in the Equatorial Pacific-extending relative geomagnetic paleointensity observations through the Oligocene and into the Eocene, *Geophys. J. Int.*, 196, 694-711.

Shimono, T., Yamazaki, T., and Inoue, S. (2014) Influence of sampling on magnetic susceptibility anisotropy of soft sediments: Comparison of gravity and piston cores, *Earth Planets Space*, 66:3.

Yamazaki, T., Inoue, S., Shimono, T., Sakamoto, T., and Sakai, T. (2013) Sea-ice conditions in the Okhotsk Sea during the last 550 kyr deduced from environmental magnetism, *Geochem. Geophys. Geosyst.*, 14, 5026-5040.

Yamazaki, T., and Shimono, T. (2013) Abundant bacterial magnetite occurrence in oxic red clay, *Geology*, 41, 1191-1194.

Yamazaki, T., Yamamoto, Y., Acton, G., Guidry, E.P., and Richter, C. (2013) Rock-magnetic artifacts on long-term relative paleointensity variations in sediments, *Geochem. Geophys. Geosyst.*, 14, 29-43.

Koppers, A.A.P., T. Yamazaki, J. Geldmacher, and the IODP Expedition 330 Scientific Party (2013) IODP Expedition 330: Drilling the Louisville Seamount Trail in the SW Pacific. *Scientific Drilling*, 15, 11-22.

Ohneiser, C., G. Acton, J.E.T. Channell, G.S. Wilson, Y. Yamamoto, and T. Yamazaki (2013) A middle Miocene relative paleointensity record from the equatorial Pacific, *Earth Planet. Sci. Lett.*, 374, 227-238.

Koppers, A.A.P., Yamazaki, T., Geldmacher, J., Gee, J.S., Pressling, N., Hoshi, H., and others (2012) Limited latitudinal mantle plume motion for the Louisville hotspot, *Nat. Geosci.*, 5, 911-917.

Yamazaki, T., and Ikehara, M. (2012) Origin of magnetic mineral concentration variation in the Southern Ocean, Paleoceanography, 27, PA2206.

Yamazaki, T. (2012) Paleoposition of Intertropical Convergence Zone in the eastern Pacific inferred from glacial-interglacial changes in terrigenous and biogenic magnetic mineral fractions, Geology, 40, 151-154.

Yamazaki, T., and Solheid, P. (2011) Maghemite-to-magnetite reduction across the Fe-redox boundary in a sediment core from the Ontong-Java Plateau: influence on relative paleointensity estimation and environmental application, *Geophys. J. Int.*, 185, 1243-1254.

Yamazaki, T., Takahashi, M., Iryu, Y., Sato, T., Oda, M., Takayanagi, H., Chiyonobu, S., Nishimura, A., Nakazawa, T., and Ooka, T. (2010) Philippine Sea Plate motion since Eocene estimated from paleomagnetism of seafloor drill cores and gravity cores. *Earth Planets Space*, 62, 495-502.

Yamazaki, T., Seama, N., Okino, K., Kitada, K., Joshima, M., Oda, H., and Naka, J. (2003) Spreading process of the northern Mariana Trough: Rifting-spreading transition at 22N. *Geochem. Geophys. Geosyst.*, 4, 1075.

Yamazaki, T., and Oda, H. (2002) Orbital influence on Earth's magnetic field: 100,000-year periodicity in inclination. *Science*, 295, 2435-2438.

Gonzalo Alejandro Yañez Carrizo (Chile)

Personal information

Born: 1959

Studies:

- Ph.D. Geophysics Columbia University, U.S.A. 1995
- M. Phil. Geophysics Columbia University, U.S.A. 1992
- Master in Geophysics, Universidad de Chile, Chile 1983

Languages: Spanish/English (written/spoken)

Professional experience

- **1984-1991: Junior Geophysicist, Sernageomin, Chile**

Relevant Projects: Airborne Geophysics, Chile, Antarctic Peninsula, Weddell and Ross Sea (tectonic research). Mining (JICA) and oil Exploration (ENAP).

- **1992-1996: Chief Geophysicist Sernageomin, Chile**

Relevant Projects: Airborne Geophysics, Marine Geophysics (tectonic Research), mining exploration (Codelco)

- **1997-2001: Project Manager, Geodatos, Chile**

Relevant Projects: (Chile Colombia Argentina Mexico): mining, geothermal, Oil, groundwater exploration, Induced seismicity applied research.

- **2001-2010: Chief Geophysicist/Geophysical Director Codelco Chile**

Relevant Projects/Activities (Chile Brasil Mexico): mining exploration (Grav&Mag, EM, IP, RAD, seismic). Technology developments (UAV, Natural Seismicity, IP). Leader of Generative program (2008-2009)

- **2010-: Expert Consulting DICTUC SA.**

Relevant Projects (AMSA, Codelco, DIFROL, QPX, MIM, Lomas Bayas, DGA).

Academic experience

- Full time Associated Professor, PUC, 2010-
- Associated Professor UCH 1984-2011
- Invited Professor PHD program UCN, Antofagasta 2004
- Invited Professor, UBA, Buenos Aires, 2004
- Intensive Course: Geophysical Exploration, SGCH, 2010
- Intensive Course: Geophysical Exploration UCN, Antofagasta, Chile, 2013 and 2015

Research projects

FONDECYT

- 1141139 Nature and tectono-magmatic significance of transverse crustal structures in the Andes (2014-2017), Co-Investigator
- 1061253, Crustal seismicity and velocity structure in the principal cordillera (33°34'S): (2005-2007), Co-Investigator.

- 1020972. Flat slab to steep subduction change of Nazca Plate. 2002-2004, Co-Investigator
- 1000136. Numerical modeling of ridge subduction whith geological and geophysical constraints (2000-2002), PI.
- 1960008. A continuous deep magnetotelluric study over the Melipilla Anomaly zone (MAZ) (33-34°S), (1996-1997), PI.
- 1940196. Tectonic framework of the Miocene Arc at 34°S, Co-Investigaor.
- 1940431. Volcanism associated to liquiñe-ofqui fault. (1994-1995), Co-Investigator
- 1930164. Crustal thickness and the Andean cordillera compensation (1993-1994), PI.

FONDEF

- D1011027. Development of a seismic hazard platform for northern Chile (2012-2015), Director.
- D0011104. Submarine gas hydrates (2002-2004), Co-Investigator.
- D0011104. UAVsystem mining exploration. (2006-2009) Co-Investigator.

FONTEC

- 4WDgeophysical-motorcycle-system. (1997-1998), PI.

Bicentenario-Program

- Anillo ACT-18.Tectonomagmatic control of giant ore deposits (2006-2009), PI.

FONDAP-CONICYT, Program

- CEGA, Andean Geothermal Center of Excellence N° 15090013, associated research (2011-2020)
- CIGIDENNational Research Center for Integrated Natural Disasters Management, associated research (2014-2020)

FONDEQUIP-CONICYT, Program

- **Sistema Geofisico Multi-parámetro**, EQM140015, 2014, PI.

Nucleo-Milenio

- **Trazadores de Metales en Zonas de Subducción**, 2015-2020 (Senior Research)

Fundación-Chile-Grant

- **GfDas–GeoMagDrone, FCH, PI (2016)**

Publications (ISI)

Parra, J.C., G. Yañez. Provincias Magnéticas del Chile Central Andean-Geology, 15/2/1-32, 1988.

Yañez, G., J. LaBrecque. 3-D Magnetic modelling at intermediate wavelength in the North Atlantic and Northeast Pacific basins. JGR, 102/7947-7961, 1997.

Yañez, G., A. Giavelli, J. Cañuta. Grado de compensación isostática en el Altiplano: Análisis gravimétrico de 2 y 3 dimensiones. In: El Altiplano, 15-22, 1997.

Yañez, G., P. Cuna, R. Fernandez. Sobre el origen y significado geológico de la anomalia Melipilla, zona central de Chile. Andean-Geology, 25/2/175-198, 1998

Godoy E., G. Yáñez, E. Vera, Inversion of an Oligocene volcano-tectonic basin and uplifting of its superimposed Miocene magmatic arc in the Chilean Andes: first seismic and gravity evidences. Tectonophysics, 306/217-236, 1999.

Yañez, G., C. R. Ranero, R. VonHuene, J. Diaz. Magnetic anomaly interpretation across the southern central Andes (32°-34°S): The role of the Juan Fernandez Ridge in the late Tertiary evolution of the margin. JGR. 106/6325-6345, 2001

Yañez, G., J. Cembrano, M. Pardo, C. Ranero, F. Selles. The Challenger-Juan Fernandez-Maipo major tectonic transition of the Nazca-Andean subduction system at 33°-34°S: Geodynamic evidences and implications. JSES, 15/23-38, 2002

M. E. Ghidella, G. Yáñez, J. L. LaBrcque, Revised tectonic implications for the magnetic anomalies of the western Weddell Sea. Tectonophysics, 347/65-86, March 2002

Garrido I., J. Cembrano, A. Silva, P. Stedman, G. Yáñez. High magma oxidation state and contractional deformation: key factors in the generation of Andean porphyry copper deposits, Central Chile (31-34°S). Andean-Geology, 29/1/3-14, 2002.

Tassara A., G. Yañez, Rigidez de la litósfera Andina (12°-47°S) y su relación con la segmentación del orógeno. Andean-Geology, 30/159-186, 2003.

G. Yañez, J. Cembrano, The role of the viscous plate coupling in the late tertiary Andean deformation. JGR, 106/6325-6345, 2004.

Cembrano J., Lavenue A., Yañez G.,The Geology of Chile, 9, Neotectonics, 2007.

Piquer J., R. Charrier, JC. Castelli, G. Yañez, El Cenozoico del alto río Teno, Cordillera Principal, Chile Central: estratigrafia, plutonismo y su relación con estructuras profundas, *Andean-Geology* 37 (1): 32-53, 2010.

Arriagada C., G. Arancibia, J. Cembrano, F. Martinez, D. Carrizo, M. VanSintJan, E. Saez, G. Gonzalez, S. Rebolledo, S. Sepulveda, E. Contreras-Reyes, E. Jensen, and G. Yañez, Nature and tectonic significance of co-seismic structures associated with the Mw 8.8 Maule earthquake, central southern Chile forearc. *Jour Struct Geology*, 33/891-897, 2011.

Aron, F., R. Allmendinger, J. Cembrano, G. González, and G. Yáñez, Permanent Forearc Extension and Seismic Segmentation: Insights from the 2010 Maule Earthquake, Chile, JGR, doi:10.1029/2012JB009339, 2013.

Allmendinger, R. W., G. González, J. Cembrano, F. Aron, G. Yáñez, Splay fault slip during the Mw 8.8 2010 Maule Chile earthquake: COMMENT. Geology, 41(12), e309–e309, doi:10.1130/G34326C.1, 2013.

Hunter F., E. Saez, F. Leyton, G. Yañez, Combining active and passive multi-channel analysis of surface waves to improve reliability of Vs,30 estimation using standard equipment, Bull.Earth.Eng., DOI:10.1007/s10518-014-9662-5, 2014.

Yañez G., M. Muñoz, V. Flores-Aqueveque, A. Bosh, 2015, Gravity derived depth to basement in Santiago Basin, Chile: implications for its geological evolution, hydrogeology, low enthalpy geothermal, soil characterization and geo-hazards, Andean Geology, 42/147-172, doi: 10.5027, 2015.

Becerra A., L. Podestá, R. Monetta, E. Saez, F. Leyton, G. Yanez, Seismic microzoning of Arica and Iquique, Chile, Natural Hazards, DOI: 10.1007/s11069-015-1863-y, 2015

Aguilef S., J. Araya, G. Yañez, Relationship between bulk mineralogy and Induced Polarization responses in IOCG and Porphyry Copper mineralization, Northern Chile, Exploration Geophysics, doi:10.1071/EG15077, 2016.

Shrivastava M. N., G. González, M. Moreno, M. Chlieh, P. Salazar, C. D. Reddy, J. C. Báez, G. Yáñez, J. González, J. C. delaLlera, Coseismic slip and afterslip of the 2015 Mw 8.3 Illapel (Chile) earthquake determined from continuous GPS data, GRL, DOI:10.1002/2016GL070684, 2016.

Perez-Estay N., G. Yáñez, S. Carretier, E. Lira, J. Maringue, Seismic hazard in low slip rate crustal faults, estimating the characteristic event and the most hazardous zone: study case San Ramón Fault, in southern Andes, NHESS, 16/1–18, doi:10.5194/nhess-16-1, 2016.

Other relevant activities

- Associated Editor Andean Geology, Chile, 2000-
- Vice-president Geological Society 2003-2006
- Referee of international journals (Economic Geology, JGR, Tectonics, Tectonophysics, JSES)
- AGU member since 1983
- Referee: Conicyt Projects, Chile (1994-); Conicet projects, Argentina (2008-); NASA projects (2010)
- Director of Geological Society (2010-2011)
- Panel Referee: FONDEQUIP-CONICYT (2015); FONDEF-CONICYT (2016), BECAS-CHILE-CONICYT, (2016-2017)